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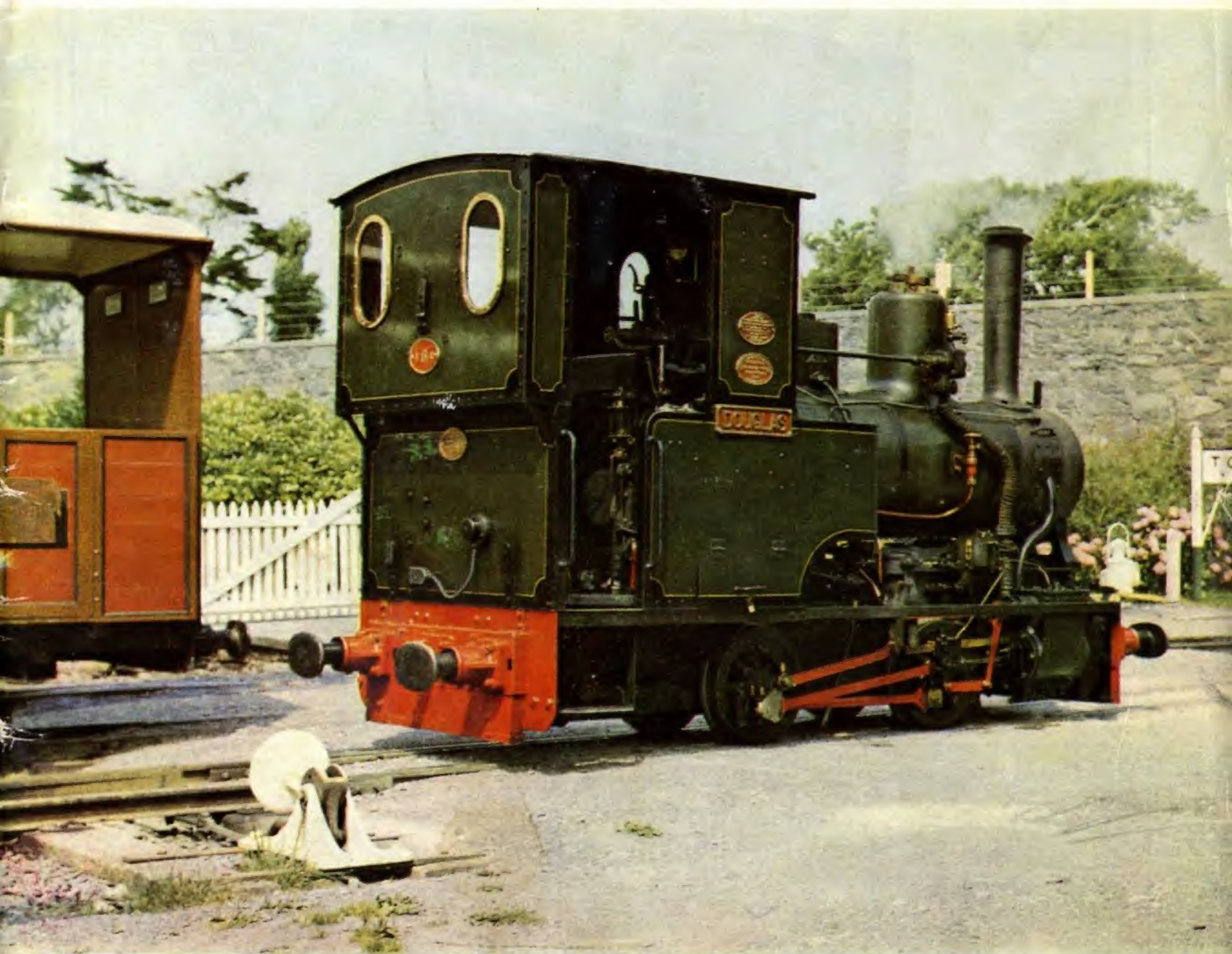
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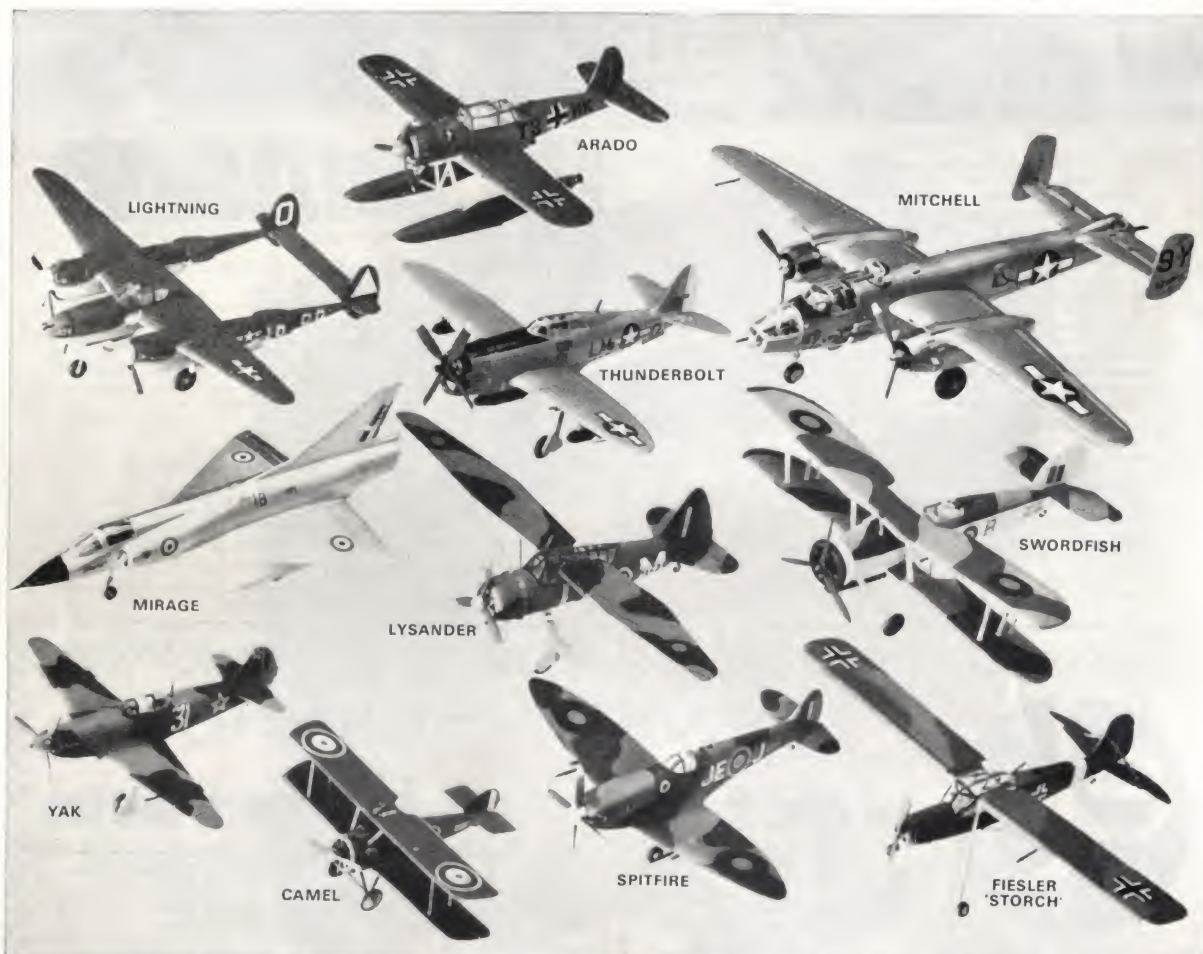
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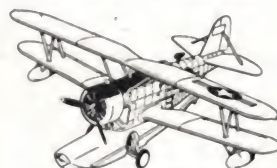


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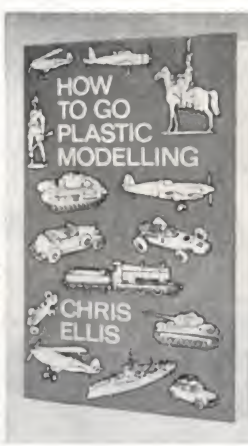
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AIRFIX magazine FOR PLASTIC MODELLERS

May 1969

Volume 10 No 9

Editor Chris Ellis

Cover Picture

Simmering gently at Towyn Wharf station, Talyllyn Railway 0-4-0 WT locomotive No 6 *Douglas* captures the essential charm of narrow gauge railways which makes them an increasingly popular modelling subject. *Douglas* was one of six built by Andrew Barclay & Co for the War Department and delivered to the Army Service Corps in February 1918. After World War I it saw service on the RAF Railway at Calshot until 1945 and in 1953 it was presented by its next owners, Abelson & Co, to the Talyllyn Society. To run on the Talyllyn line it was overhauled at Griffin Foundry, Oldbury, and the wheel gauge narrowed from 2 ft 3 in to 2 ft. Delivered on July 19, 1954, this four-coupled well tank is one of the most powerful and reliable locomotives on the line. It is 12 ft 5 1/2 ins in length and weighs 6 ton 18 cwt. The picture makes an excellent painting and lining guide for the conversion on page 410 of this issue which is based on Talyllyn No 1. (Photograph by Michael Andress)

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MEMBER OF THE AUDIT
BUREAU OF CIRCULATIONS

TWO well known aircraft are in the news this month. One is the 300 passenger DC-10 and the other the Harrier.

The photograph on this page shows something of the final shape of the DC-10. This, however, is a mock-up which is being built at the Long Beach factory of McDonnell Douglas to test various systems and cabin layout.

Engineers are working side by side with carpenters, cabinet makers and aircraft assemblers to build several full scale models of the DC-10 in plywood, plastic and metal. Construction of the full length and sectional mock-ups is an essential preliminary to assembly of the first actual aircraft that should start around June this year.

The mock-up assemblies provide engineers with a three-dimensional check of their designs and are used to develop techniques for production, operation and maintenance of the DC-10. They also serve to demonstrate details of styling, design and construction to airline customers.

The DC-10 is an advanced luxury jet able to carry more than 300 passengers on short range to trans-Continental domestic flights or on long inter-Continental routes. It is aimed to enter airline service late in 1971. Douglas has received firm orders



and options for no less than 141 DC-10s from American Airlines, United Airlines, Northwest Airlines, and Trans-International Airlines.

Twenty different full scale mock-up parts of the aircraft are approaching final configuration as the DC-10 progresses. The work of more than 2,000 engineers at Long Beach, thousands more at other McDonnell Douglas plants and at sub-contractor facilities, including the United Kingdom, flows into the models for checking. The mock-ups are designed to save time and money in developing a more efficient design and it also gives Douglas engineers production knowledge to use when the first aircraft start down the assembly line. Daily meetings in the mock-up area are held between the various engineering and manufacturing divisions to ensure complete system integration while the aircraft is being designed. Problems in the routing of wires and tubing or interference in the installation of different parts are often solved on the spot. It is in this way that the American aircraft industry is able to short-cut many of the long and laborious conferences which seem to be the feature of other aircraft construction companies elsewhere. After the general layout has been decided it appears that the day-to-day problems are sorted out on the spot. Manufacturing engineers use the mock-ups to work out the best sequence for assembly of the thousands of parts in the jet before it gets anywhere near the production line.

Other engineers work with the models to develop the most efficient procedures for ground servicing and to ensure that inspection, removal and re-installation of DC-10 components can



Concorde first flight. An excellent picture of the BAC/SUD Concorde on its maiden flight on March 2. Since then the aircraft has achieved a steadily increasing number of hours in the air during which the first tests on proving the flight envelope have been carried out.

be accomplished swiftly. Human factors engineers join with pilots to determine the best arrangements of cockpit instruments and controls and work with stewardesses to check the design of the galley and provisions for passenger service.

There are three full length mock-ups of the 180 ft long DC-10; one is used primarily for passenger cabin interior design and styling and serves as a sales demonstration model. It has a fully equipped lower deck galley with working ovens and lifts that carry food trolleys and stewardesses between the kitchen and the main cabin.

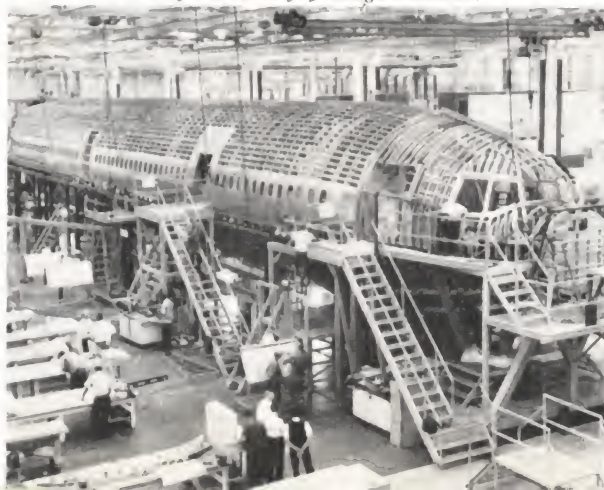
Another full length plywood and metal fuselage is being used for test installations of doors, air conditioning ducts, seats, wiring assemblies, lavatories, cloak rooms and overhead hat and luggage receptacles.

Most elaborate of the three is the full length production development version. Built from engineering layouts and production drawings it is the 'ground-bound' prototype of the DC-10 which will be fitted with every part and system designed for installation in the real aircraft. The development version is all metal and dimensionally precise—an exact twin of the first production aeroplane except that it is not intended to fly. A separate development version of the complete wing is also near completion.

Elsewhere at the Long Beach factory there are three complete mock-ups of the DC-10 cockpit section including accurate simulation of all of the lighted instruments and panels for checking critical night lighting conditions. Other full scale sectional mock-ups include the landing gear and wheel wells, complete nose and tail sections and models of fuselage sections to pre-test air conditioning efficiency and for development of passenger door installation.

In addition there are detailed auxiliary mock-ups of sections

Jet liner for the 'seventies. The full-size production development mock-up of the 300 passenger DC-10 tri-jet is nearing completion at McDonnell Douglas Corporation's Long Beach, California factory. The model is a prototype of the first production aircraft on which assembly will begin later this year. It has a length of 180 ft and a 20 ft fuselage diameter.



where internal installations must be designed with extra care such as the radio panel, the electrical power centre and the Flight Engineer's station.

Douglas engineers believe that this is the most comprehensive mock-up and development programme any individual company has ever undertaken in developing a commercial aircraft.

Harrier progress

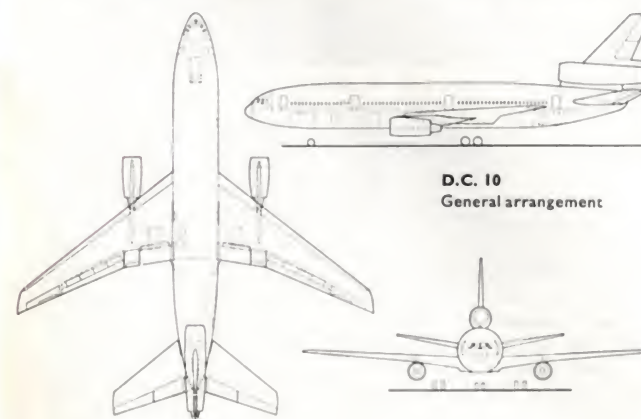
Journalists were allowed to see the Harrier production line at Kingston last month. There are now 77 Harrier single-seat and 13 two-seat aircraft on order for the RAF. Twelve aircraft have flown to date and the first two-seat version is due to fly later this month. The testing of the aircraft and its systems is nearing completion and the first deliveries should be made to RAF Wittering very shortly.

The production line is now well ahead and it looks as if work on the Harrier can last for about another nine months before new orders from other Governments will be needed to keep things going. Demonstrations have been given in many places and aircraft of the Harrier family have operated from five different ships including the small helicopter platform of the Italian guided missile escort cruiser *Andrea Doria*.

The present test programme has included handling, performance, engineering and navigation/attack trials. These have proved that the aircraft inherits all the strength, fatigue life and good handling characteristics of its predecessor the Hunter. The Harrier has been flown supersonically with a wide range of external stores and tests are continuing with extensive armament trials to ensure that weapon delivery accuracy is within the specified limit. Navigation trials are virtually complete and A & AEE Boscombe Down are currently evaluating the Harrier prior to its introduction into the RAF.

Recent developments of the aircraft include a substantial increase in the thrust of the Pegasus engine with the potential of doubling the existing war load of 5,000 lb. The maximum ferry range (without in-flight refuelling) has been given as 2,000 nautical miles. Refuelling tests have been flown and successful contacts have been made with the port, starboard and centre drogues of a Victor tanker at heights up to 40,000 ft. Fuel jettisoning has also been carried out.

During the armament trials three 1,000 lb HE bombs have been carried and released in addition to practice and 500 lb bombs. 68 mm SNEB rockets have been fired from their Matra launchers (the Harrier can carry 114 such rockets each one capable of penetrating 15 in. of armour plate). Extensive firing has been carried out with the 30 mm Aden cannons throughout a wide speed and altitude range. Wide experience



May, 1969



Part of the Harrier production line at Kingston. In the foreground are airframe Nos 21, 24, 26 and 29. A total of 77 single-seat and 13 two-seat aircraft are on order for the RAF.

has also been gained with the Ferranti 541 inertial navigation/attack system including the moving map display and the Specto head-up display.

Preservation news

I HAVE recently been told of some of the activities of the Northern Aircraft Preservation Society. To their considerable sorrow a Mosquito BXVI, which was offered for preservation was found to be in such an advanced state of decay as to be beyond redemption. The aircraft has been used for Civil Defence training at the Royal Ordnance Factory, Chorley. At various times demonstrations of fire fighting and crash rescue had been given and the surviving sections of the aircraft's wooden skin were so rotten that a finger could be pushed through in places when it was examined. However, as many parts and fittings as possible have been retrieved and should be on exhibition in due course.

As part compensation for the disappointment of the Mosquito the Society have received the tail section of a Spitfire Mk XII from the University of Salford. It is believed that no complete Spitfires of this mark survive and the tail section was displayed as something of a rarity at the Society's exhibition in Manchester Central Library during April.

Also in this exhibition were the Knutsford-built Flying Flea, owned by the Society's Chairman Peter Schofield and also the man-powered Killick helicopter.



New markings for FAA Phantoms. Top: The familiar 767 Sqn marking on the tail of Phantom FG1 XT873 (black serial). Above: The first machine re-painted in 892 Sqn markings, XT859, with red/white/blue 'Omega' emblem chosen for what is possibly the last fixed-wing FAA squadron to commission. More on this next month (Photos by Stephen Wolf).

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Part 5: Assault guns

FROM experience gained during World War I the German Army requested an armoured mobile gun, able to advance with the Sturm-Infanterie (assault troops) and destroy local strong points when supporting artillery was not available or capable of doing this task.

As the design asked for was for a vehicle with a low silhouette, this made it impossible to mount the gun in a revolving turret. So it was decided to fit the gun in the front superstructure of the vehicle. By doing so it limited the traverse of the gun but this was accepted as the vehicle was not intended for tank fighting but for quick direct support fire. The gun chosen was the short barrelled 7.5 cm KwK L/24, an ideal close support weapon already in use on models of the Panzerkampfwagen IV. The vehicle selected as the basis for the tracked mount was the Panzerkampfwagen III which was then in full production and well able to carry the heavy load. This type of vehicle was called Sturmgeschuetz III (Assault Gun III), or StuG III for short.

The first known battle use of these vehicles was in clearing the Ardennes Forest roads in preparation for the break-through at Sedan in May, 1940. Early assault gun batteries were provided with a 1 ton semi-tracked armoured vehicle, the Sd Kfz 252. This vehicle carried the Battery Commander and ammunition, and towed a trailer containing additional ammunition. The commander maintained liaison with the assault guns and the accompanying infantry. The half-track vehicle was also used for reconnaissance. Later during the war various StuG III were modified, fitted with extra wireless equipment, and used by unit commanders; these were known as Zugfuhrerswagen. StuG III with guns removed were also used to carry additional assault gun ammunition.

With the entry of the German Army into Russia, the Sturmgeschuetz was called on to perform another role, that of anti-tank defence. This it was unable to do due to the inadequate gun it carried. As a result it was re-armed with the long barrelled high velocity 7.5 cm StuK 40 L/43. Other modifications were increased armour, and minor alterations to the superstructure, including a fan on the turret roof to ventilate the fighting compartment. Later marks of the StuG III were again re-armed with a more powerful weapon, the 7.5 cm StuK 40 L/48 and fitted with a commander's cupola on the turret roof. Armoured machine gun shields were also fitted, and armoured skirting and Ostketten (East tracks) with grousers became a normal part of the equipment. Late production models were sometimes fitted with a remote controlled machine gun. During 1942 a proportion (about one in ten) of StuG III were fitted with the light 10.5 cm Howitzer.

A detailed description of StuG III development is necessary to give complete coverage of the series model by model, and this follows here, complete with full German descriptions and their English meanings.



First of the assault gun models based on the PzKw III chassis was the StuG III Ausf A, based on the PzKw III Ausf F chassis and distinguished by the early pattern sprocket and idler.



Gepanzerte Selbstfahrlafette fuer Sturmgeschuetz 7.5 cm Kanone Ausf A (Armoured Self-propelled Carriage for Assault Gun, Model A), (Sd Kfz 142): Through a series of experimental models had been built during the period 1937-1939 this was the first model to go into full production. These were built in 1940, and the first batch completed were used in the invasion of France. Based on the chassis of Panzer III model F (Type 5/ZW) and armed with the short barrel 7.5 cm KwK L/24 gun mounted low in the front superstructure, this vehicle had the gun compartment roofed over with access hatches for the crew. The commander was provided with a scissors type telescope for observation of fire and the driver had the normal elongated laminated glass block and shutter. In addition he had an episcopes formed by two KFF periscopic telescopes. Armour thickness ranged from 50 mm on the nose plates to 30 mm on the superstructure sides, which were further protected by 9 mm angled space plates. There was an armoured pannier on the left side of the superstructure which housed radio equipment. The engine was the Maybach 12 cyl HL 120 TR with the Maybach Variorex pre-selective transmission. No escape hatches were fitted in the hull sides. Weight was about 19½ tons, it had a crew of 4 and 44 rounds were carried. A total of 184 of these vehicles were built by Alkett AG.

Gepanzerte Selbstfahrlafette fuer Sturmgeschuetz 7.5 cm Kanone Ausf B, C and D (Sd Kfz 142): Produced from 1941 and basically similar to StuG Ausf A, there was very little external difference between these three models. Based on the chassis of the Panzer III Ausf H with 400 mm wide tracks, drive sprockets with six D-shaped holes and open eight-spoked rear idler. The Ausf A differed, of course, in being fitted with the solid idler with the eight spokes set in relief and a driving sprocket of the perforated type with eight round holes. Armed with the short-barrel 7.5 cm KwK L/24 guns, it carried 50 rounds and had a crew of 4. Engine fitted was the Maybach HL 120 TRM. A total of 548 of these models was built.

Sturmgeschuetz III Ausf E (Sd Kfz 142): Produced in 1942, this was the last model to be armed with the short barrelled 7.5 cm KwK L/24. Though similar in appearance to the StuG III Ausf B, C, and D, this vehicle was fitted with an additional armoured pannier on the right side to carry extra radio equipment when in use as a Zugfuhrerswagen (Unit Commander's vehicle). When not serving in this role the extra space was used to stow additional ammunition. This model was fitted with an intercom radio in contrast to Ausf A, B, C and D which all had speaking tubes only for crew communication. Some of these vehicles were later re-armed with the long barrelled 7.5 cm gun.

Sturmgeschuetz III Lange 7.5 cm Kanone L/33: Produced in 1941, this was an interim model between those types with the short and long barrelled 7.5 cm guns. The gun, 33 calibres long, was mounted in a new pattern of gun mantlet which was subsequently used in the later versions of the Sturmgeschuetz

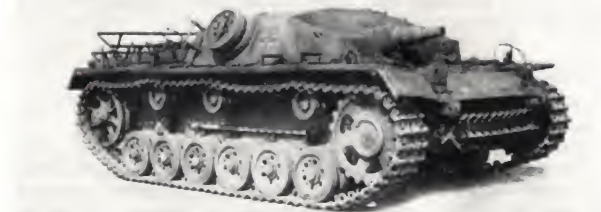
mounting the 7.5 cm StuK 40. The chassis was basically a StuG III Ausf E with an extended superstructure.

Sturmgeschuetz 40 Ausf F, (StuG III Ausf F), (Sd Kfz 142/1): Early in 1942 the first Sturmgeschuetz models with the long barrel 7.5 cm StuK 40 L/43 were introduced, based on a chassis similar to StuG III Ausf E, with a modified superstructure which now had a fan fitted on top to ventilate the fighting compartment. Armour thickness was still 50 mm on the front and 30 mm on the sides. There was a crew of 4, and 44 rounds were carried. Engine was a Maybach HL 120 TRM. Some of these vehicles appeared without muzzle brakes. Weight was 21.6 tons, and 119 vehicles of this model were built.

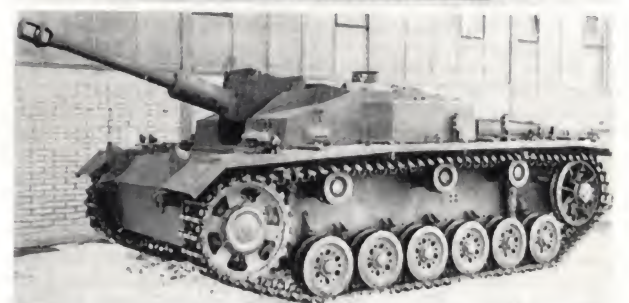
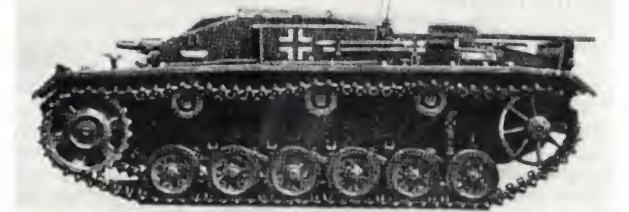
7.5 cm Sturmgeschuetz 40 Ausf F/8: This was the StuG III Ausf F fitted with a longer 7.5 cm gun, the Sturmkanone (StuK) 40 L/48. This new gun was installed from the 120th production vehicle onwards in the StuG III Ausf F series.

7.5 cm Sturmgeschuetz 40 Ausf G (StuG III Ausf G), (Sd Kfz 142/1): This model appeared at the end of 1942 based on the chassis Type 8/ZW (ie, the Pz III Model J chassis). Again various changes had taken place. The StuK 40 L/48 gun was fitted and the nose frontal armour was increased to a total of 80 mm with an additional armour plate of 30 mm thickness bolted to the basic 50 mm front vertical plate (ie, 50+30), giving extra protection to the driver's visor.

On the roof of the modified superstructure was a rotating commander's cupola mounted on the nearside of the roof slightly to the rear. This appeared for the first time—previously the commander had a fixed hatch. Hinged double access doors were also provided in the other side of the turret roof. Also fitted on the roof was a small armoured shield for use with a



Above, top to bottom: The Sd Kfz 252 half-track munitions carrier and command vehicle, plus ammunition trailer, originally used with the StuG III. Next StuG III model was the Ausf B on the PzKw III Ausf H chassis. StuG III Ausf D had slightly modified superstructure.



Above, top to bottom: StuG III Lange 7.5 cm was the interim type between models with short and long barrel 7.5 cm guns. Note the larger mantlet. StuG III Ausf E showing very clearly the armoured side extension for the radio. This is a vehicle fitted as a Zugfuhrerswagen as indicated by the radio aerials visible on the superstructure rear. StuG III Ausf F, first of the vehicles with the long gun.

Remaining StuG III models will be illustrated next month. machine gun model MG 34 or MG 42. Smoke dischargers, in units of three were sometimes fitted either side of the front superstructure. Many of these vehicles were fitted with brackets and rails bolted to the superstructure sides for the fitting of additional spaced vertical armour (skirting plates) and some were also treated with Zimmerit anti-magnetic grenade plaster, which was applied as a layer of paste-like substance over the hull sides. On some of the later models the commander's cupola was a non-rotating type, and the base of the cupola was in this case protected at the front by a rounded slab of cast armour which was welded to the superstructure roof. The StuG III Ausf G had a crew of 4, and now carried both 7.5 cm (54 rounds) and MG (600 rounds) ammunition. The weight of this model had increased to 23.9 tons.

7.5 cm Sturmgeschuetz 40 Ausf G (Saukopf), (Sd Kfz 142/1): This was the final production version of the Stu G III, similar to Ausf G but with a partially cast superstructure, and a cast mantlet called a Saukopfblende or Saukopf (Pig-Head) due to its boar-like shape. Some of these models were fitted with a remote controlled machine gun on the turret roof as was carried in several other German AFV types of the late war period. Some were fitted with brackets and rails to hang armoured skirting. This late model went into production in 1944, the most refined StuG III type to appear and the most powerfully armed and armoured of the entire 'family' of Panzer III chassis vehicles.

NEW BOOKS

REVIEWED FOR MODELLERS

German tanks

GERMAN TANKS OF WORLD WAR 2, by F. M. von Senger und Etterlin. Published by Arms & Armour Press, 677 Finchley Road, London NW2. Price 85s until May 15, 1969, then 95s.

THE original edition of this book will be better known to enthusiasts as *Die Deutschen Panzer*, which has been available for some years as a German language edition. The demand for an English version of this famous book has now been met and the opportunity has been taken to amend the German edition and correct errors in the captions and text. In addition quite a number of extra pictures are included, and some important types omitted from the German edition have also been added. Most of the drawings and pictures are carried over from the German edition but many of the poorer pictures have been replaced with better ones, and the order of presentation has been slightly re-arranged in parts to give a more logical sequence. Finally a much larger page size is used. Aside from all this the comprehensive text remains—but in English—and also includes added material.

In short this is a very well produced book, the 'standard' and most complete work on German tanks of the 1926-45 period. It includes full coverage also, of armoured half-tracks and armoured cars as well as miscellaneous armoured types. There are a few very minor omissions remaining but generally speaking, if you have this book you have virtually all you need to know on German AFVs at your fingertips. Prior to May 15 there is a useful 'pre-publication' discount for early purchasers.

Narrow gauge

THE RAVENGLASS & ESKDALE RAILWAY, by W. J. K. Davies. Published by David & Charles (Publishers) Ltd, South Devon House, Railway Station, Newton Abbot, Devon. Price 42s.

THOUGH well established today as a Lake District tourist attraction, the 15 inch gauge Ravenglass & Eskdale Railway has had a chequered history with changes of gauge as well as fortunes and management. It was conceived in the eighteen-seventies as a 3 ft gauge line to serve the Eskdale iron ore mines. The change to 15 inch gauge came about during the 1914-18 war in highly irregular circumstances as the author reveals. In 1929, 2½ miles of the 15 inch gauge track were gauntleted with a new standard gauge line built to serve Company-owned stone quarries—all without interruption to the traffic. Today, of course, with the enthusiastic support of preservation enthusiasts as well as its increasing popularity as a holiday tourist attraction, the future seems more assured.

All these events are entertainingly described and much detailed information is given about the rolling stock and equipment. There are many excellent photographs, track plans and rolling stock drawings covering all periods of the railway's varied existence.

Steam in camera

IMAGES OF STEAM, by 'Fenman'. Price 63s.
STEAM IN SCOTLAND, Volume 1, by W. J. V. Anderson and D. Cross. Price 63s.

GREAT EASTERN ALBUM, by R. C. Riley. Price 30s.

All published by Ian Allan Ltd, Terminal House, Shepperton, Middx.

THREE Ian Allan albums of railway photographs; these are all entirely different in scope and content.

Images of Steam is a collection of 276 photographs and brief essays by five Cambridge graduates who combine under the pseudonym 'Fenman'. Though all the photographs were taken

during the last 10 years of BR steam, they cover a very wide variety of subjects and locations covering practically everything worth while that took place during this period. The 192 large glossy art pages reproduce the photographs well.

Steam in Scotland, Volume 1, is an album of some 220 photographs covering primarily the ex-LMS lines on the West of Scotland and largely the work of two well-known photographers, D. Cross and W. J. V. Anderson. They were all taken during BR ownership and cover the final years of steam. They are grouped in sections around a clearly defined geographical area and a small sketch map has been thoughtfully included at the beginning of each section to help readers appreciate the locations of the pictures. One other very praiseworthy feature is the highly informative captions which accompany each photograph. All the photographs are of excellent quality and beautifully reproduced—some full page—on the 159 big glossy art pages.

Proof that an album editor can make his mark even though he may not use all of his own photographs is the consistent excellence of R. C. Riley's work. *Great Eastern Album* is beautifully compiled and cleverly themed with just the right balance between subjects, the familiar, the oddities and the not so well known and the many periods in time, ranging from the turn of the century to the present day. All the 220 photographs are extremely well reproduced and are of great interest. The 112 glossy art pages are the normal Ian Allan album size.

For military fans

MILITARY MUSEUMS, by T. Wise. Published by Bellona Publications Ltd, Hawthorn Hill, Bracknell, Berks. Price 5s plus 6d postage.
WAR GAMES RULES, 1000 BC-500 AD. Published by the Ancient Wargames Research Group. Available from Bob O'Brien, 75 Ardingly Drive, Goring by Sea, Sussex. Price 8s, post free.

FIRST of these two inexpensive books is a useful guide to military museums and other similar places in Britain of interest to military enthusiasts. It reveals an astonishing number of little-known locations. Everything from the Imperial War Museum to the most obscure and tiny regimental museum is included, with addresses, telephone numbers, names of curators and staff, locations, opening times, and a résumé of the exhibits. Regimental badges are included where appropriate. There is a full index as well, making reference to any specific place a matter of seconds. Well worth having this.

Second book is an excellent work which gives every conceivable rule and idea for fighting ancient period wargames with figures like those made by Airfix. The contents are concisely and simply presented. Where possible all the major rules and situations are summarised in tabular form for easy reference. There is also a useful appendix on forming an ancient 'army' with tips for adaptations from Airfix figures, and uniform and colouring details. Lastly there are some summary tables which can be used 'in the field' for instant reference on all possible points arising during the course of a tabletop battle. The book is in looseleaf form so that pages can be detached as required, a good idea for a book that will mainly be referred to no doubt while the average wargamer is actually engaged in 'combat'.

This book is the work of a group of wargames enthusiasts which includes AIRFIX magazine contributor Bob O'Brien, a specialist in the 'ancient wargames' field. Anyone who has followed his series in this magazine will find the rules and ideas in the book most interesting.

Useful booklets

INSTANT PICTURE BOOKS. Series published by Patterson Blick, Beckenham, Kent. Price 3s 11d each.

SOMEWHAT out of the usual style of books we receive, these 'Instant Picture' books are published by the firm which makes the well-known Blick Dryprint transfer sheets. The series combines the principle of this material with informative text and full colour illustrations to provide a publication which includes additional colour pictures in Dryprint style which the reader can add to the existing printed page. In most cases books include panoramic backgrounds to which the 'Instant Pictures' are transferred as desired. Some of the titles in this constantly growing series are mainly of interest to youngsters only, but there are others which will appeal

even to more mature modellers. Outstanding is 'The Charge of the Light Brigade' which is quite a classic of its kind with superb illustrations of the badges, the uniforms, and the events related to its theme. The centrespread gives a blank battlefield to which the reader adds the soldiers from the insert sheet provided. The drawings and details are most accurate. Other titles of particular interest include 'Air Travel'—with plenty of 'rub-on' aircraft—'The American Indian', and 'Carriages to Cars'. A particular point of note is that the figure drawings in the transfers are all about 00 size—matching Airfix figures—so that they could be most useful for backscenes, etc, in dioramas or table-top photographs. Modellers will certainly find it worthwhile to keep an eye on this series (available from most bookshops) as a source of useful information or scenic material.

Air lines

ATMOSPHERIC RAILWAYS, by Charles Hadfield. Published by David & Charles (Publishers) Ltd, South Devon House, Railway Station, Newton Abbot, Devon, and distributed by Ward Lock & Co Ltd. Price 42s.

ATMOSPHERIC railways were an early Victorian invention dating from the eighteen-forties. The author not only describes them in detail, the four that were built as well as the hundreds that were proposed, but also throws light on the engineering world of the time, the personalities both friendly and hostile and the conditions under which the invention was conceived, developed and afterwards found wanting. This 240-page book is very well produced with maps, diagrams and numerous illustrations.



Part 4: Ratlines and blocks

WHEN dealing with deadeyes in Part 3, I mentioned the possibility of making these from wood, and this is a better and easier way than making them from plastic. A length of wood dowelling of the right scale diameter is marked along its length with the thickness of the deadeyes, and the outside channel is scored round between these lines with a fine triangular file. The dowel is then carefully drilled end-on with three holes to a depth just slightly more than one deadeye thickness, and the first deadeye is parted off. The drilling and parting procedure is then continued, after the scoring of the outside channel, until the required number of deadeyes is completed.

Ratlines If separate shrouds have been made as detailed earlier each individual ratline will have to be put on separately, and this is perhaps the most repetitive and gruelling work in the whole of the rigging. The first step is to calculate how far apart they should be, and in full size practice this is about 15 to 18 inches. But at small scales the correct scale interval will make them look rather too cluttered unless the finest thread is used, and this is one case where I consider appearance to be more justified than exact scale accuracy.

I feel that ratlines should not be placed closer than 8 to the inch, even when using

May, 1969

North of the border

SCOTTISH RAILWAY HISTORY IN PICTURES, by John Thomas. Published by David & Charles (Publishers) Ltd, South Devon House, Railway Station, Newton Abbot, Devon. Price 35s.

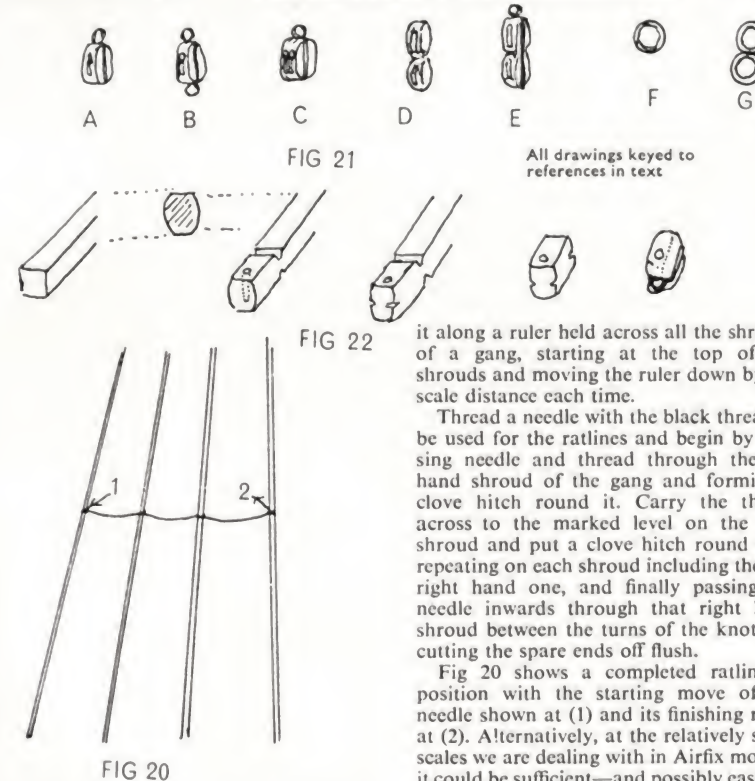
OVER 100 pages of pictures, mostly photographs, which illustrate the coming of the railway to Scotland and Scotland's contribution to railway development in the rest of the world in terms of some of the products of its renowned locomotive works, make up this book. All the illustrations are adequately captioned and their grouping into themes together with an index ensures the book's usefulness as a source of reference. Four colour plates from past David & Charles book jackets are thoughtfully reproduced. Unfortunately, the fifth colour plate produced specially for this book is not up to the same high standard and not what we expect from this publisher.

Rare pictures

RARE AIRCRAFT PHOTOGRAPHS, by Hugo Hooftman. Published by La Riviere & Voorhoeve NV, Zwolle, Netherlands.

WHAT is a rare photograph? . . . Hugo Hooftman, editor of the Dutch aviation magazine *Cockpit* tries to answer the question but the contents of this book do it more adequately for him. Rare photographs, if one interprets this phrase by meaning a photograph previously unpublished, are shown in plenty and will be of use to model makers. There is a definite slant on

Continued on page 415



the finest thread, and you will rarely find them closer than this in the preformed ratlines supplied with any kit. Incidentally, if the spacing of the ones supplied is wider than 8 to the inch it is as well to check it against the scale; quite large errors have been known to occur. It helps to mark the shrouds at the spacing chosen, which can be done with a piece of chalk or a wax pencil. Scrape it to a chisel edge and draw

it along a ruler held across all the shrouds of a gang, starting at the top of the shrouds and moving the ruler down by the scale distance each time.

Thread a needle with the black thread to be used for the ratlines and begin by passing needle and thread through the left hand shroud of the gang and forming a clove hitch round it. Carry the thread across to the marked level on the next shroud and put a clove hitch round that, repeating on each shroud including the last right hand one, and finally passing the needle inwards through that right hand shroud between the turns of the knot and cutting the spare ends off flush.

Fig 20 shows a completed ratline in position with the starting move of the needle shown at (1) and its finishing move at (2). Alternatively, at the relatively small scales we are dealing with in Airfix models, it could be sufficient—and possibly easier—to tie each ratline with a half hitch on the left hand shroud, put a spot of Durofix on each of the shrouds at the marked level, stretch the ratline across the shrouds and hold it there until the adhesive sets, finally cutting off the spare ends flush. I have seen this method used to produce quite satisfactory results, giving the right impression without being clumsy.

Continued on page 399

Camels of the 'Aces'

Drawn and described by Carl Surman

THE Sopwith Camel emerged from the Great War as the finest rotary engine fighter in the world. This statement may sound a little rash, but it is certainly true. The Camel downed more enemy aircraft than any other Allied 'plane.

The structure of the Camel was typical of aircraft design at that stage of development: basically simple, no complicated and costly constructional technique being employed, it was certainly a far cry from the graceful lines of the Pfalz. The fuselage was of braced box girder design, having ash longerons and spruce spacers. Metal and ply panels encased the forward fuselage, the rest being fabric covered. When asked about this machine, one pilot later commented upon its flying characteristics: 'inexcusably draughty'. A bomb rack with four 20 lb Cooper bombs supplemented the twin Vickers for ground attack duties. Aircraft thus engaged often had pieces fretted out of the engine cowling, to improve cooling at low levels.

Aldis sights were on occasions supplemented by ring sights, and the starboard side of the ply panel enclosing the gun breech block was sometimes cut away to facilitate easier jam clearing. Windscreens and pumps were carried, as often as not.

Wings were made up of box spars with a wooden leading edge and metal trailing edge, and this also formed the wingtip planform and most of the empenage. Wing ribs were heavily fretted three-piece structures of 3-ply, form ribs being inserted in between each long rib, back to the front spar. In an attempt to improve the pilot's upward view, many Camels could be found with enlarged centre section cut-outs. The original cut-out was enlarged in a span-wise direction, usually a corresponding area being removed from behind the rear spar, but the pilot's upward view was still poor.

The drawings opposite show five Camels, flown at one time or another by five famous aces, all, with the exception of Captain Insall's aircraft, carrying normally proportioned national insignia in the standard eight positions, roundels on khaki-green surfaces having a white outline. The Airfix Camel is a suitable subject for these simple conversions though, unfortunately, it was one of Airfix's early kits and could do with some extra detailing. To begin with, file off the port side lacing detail, cut away the top of the panel immediately forward of the cockpit covering the single Vickers. Two new Vickers should now be made and later affixed in the space left by the amputation of the top panel, an Aldis sight from stretched sprue lying between the guns.

Trim the washer-type axle holes in the undercarriage legs: these should have a straight rather than curved outside shape. Add a fairing to the axle itself. The square hole in the starboard oval inspection plate should be duplicated on the port side. Drill holes to represent oil and petrol filler holes. Cut away the Lewis gun from its rib and file the V-shaped depression behind the engine on the

Below: The Camel night-fighter flown by Insall. He flew this machine as a 'hack' and not operationally, when commanding a Camel wing (Imperial War Museum).



Above: Major W. G. Barker's Camel B6313 as shown in drawing 2 opposite. Cut-outs in the engine cowling and upper wing are clearly seen. Note in particular the notched interplane struts, best depicted in model form by nicks from a craft knife (Imperial War Museum).

underside of the fuselage.

If Captain Insall's aircraft is to be modelled, a new cockpit should be cut farther back, and the height of the decking in front of it reduced. Take measurements from the drawing. Fill the resultant gap with plastic sheet and model putty. Flare brackets and landing lights can be made from pieces of scrap plastic as can the two Lewis guns, their mounts being made from 15 thou plastic card. Now we can consider each aircraft in detail.

(1) The first drawing illustrates B7270, a Clayton and Shuttleworth built Bentley-powered Camel, flown by Capt Roy Brown (a Flight-Commander at the time), during the combat which resulted in the death of Capt Manfred von Richtofen (interested readers should refer to the three-part series which appeared in *Cross and Cockade* some time ago). The centre section of the upper wing had a red chevron with white edging, as in drawing V. All metal panels, including the engine cowling, were painted red, wheel covers being treated in a similar fashion.

Fuselage roundels had white bars either side of them, one in front, two behind. Aft of the rearmost pair, the aircraft's serial number was painted in white, and this was also duplicated on the rudder in black, taking up two lines. A small naval windscreen was fitted just in front of the guns' feed blocks. A pump was carried, attached to the front starboard undercarriage strut. A pitot head was also fitted, half-way up the front starboard interplane strut. A small fairing was fitted to the air intake pipe, both being red.

(2) Unlike B7270, B6313 was fitted with the fiery Clerget engine, and was flown by Major W. G. Barker whilst serving with 28 Sqn (he was C flight Commander) on the French front. B6313 followed Barker's normal decorative practice in that it made use of bars and a heart. The rear fuselage of this aircraft had seven equally spaced white vertical bars stretching from the tailplane to the fuselage roundel. The foremost bar was half the width of the others, and touched the white outline of the roundel, all these stripes extending over the top of the fuselage. A red heart pierced by a white arrow was painted on the fin.

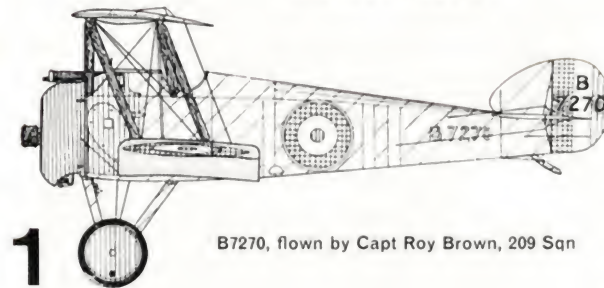
Wheel covers were khaki-green, metal surfaces were left in their natural state, air intake pipes were replaced by black car klaxons. The engine cowling had four slots fretted into its front face. In model form these can be depicted with tiny slivers of transfer cut from the De Frey black sheet. There were bomb rack hooks under the fuselage. The leading edges of each front interplane strut had notches cut in them up to the height of the pitot head, which was mounted about a quarter way down. A pump was mounted on the front starboard centre section strut, but no windscreen was fitted. This aircraft had enlarged cut-outs in the upper wing centre section, the area behind the rear spar also being uncovered, although the trailing edge tubing was retained. This is shown as B in drawing X.

(3) Major Raymond Collinshaw built up the better part of his victory tally flying triplanes with 'Naval Three'. When the unit changed to Camels, he proved to be equally at home. His aircraft was powered by a Bentley, as were all the squadron's Camels. The Squadron's insignia, a white circle, was painted just in front of the tailplane. The pilot's individual marking was painted just behind the fuselage roundel, being a white bar on the side of the fuselage extending to the top decking, where it adopted a chevron form at each edge. Underneath the leading edge of the tailplane a semi-circular inscription is visible: it has been impossible to ascertain the wording, but it was almost definitely a donor's inscription. In 1:72

Continued on page 397

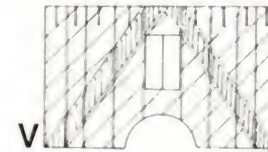
AIRFIX magazine

Red cowling and wheel covers
White bars on fuselage

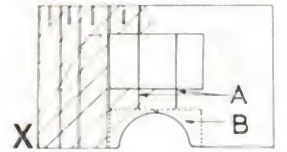


B7270, flown by Capt Roy Brown, 209 Sqn

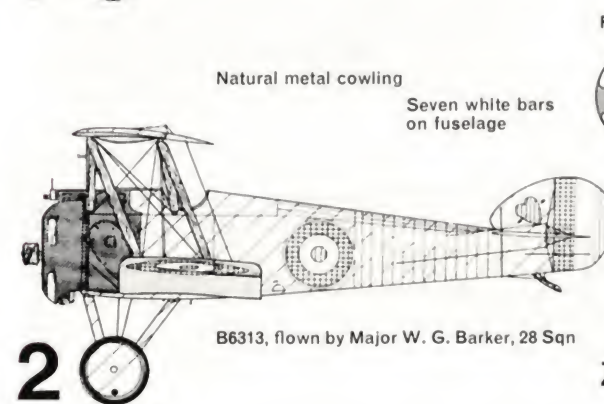
Top wing marking
for Brown's aircraft



Top wing marking
for Woollet's aircraft



A, B: extent of cut-outs
in aircraft 2-5; leave area
B in aircraft 4

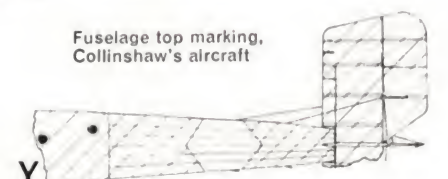


B6313, flown by Major W. G. Barker, 28 Sqn

Front cowling detail, aircraft 2

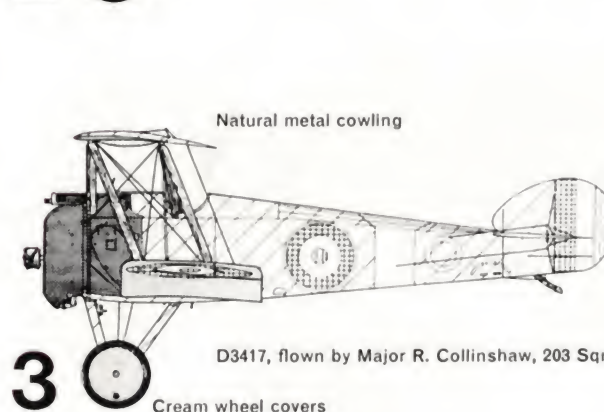


Fuselage top marking,
Collinshaw's aircraft



O 1 2 3 4 5 6
S 69

Enlargement of Woollet's personal marking

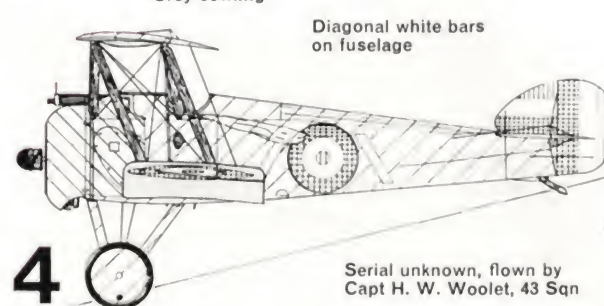


D3417, flown by Major R. Collinshaw, 203 Sqn

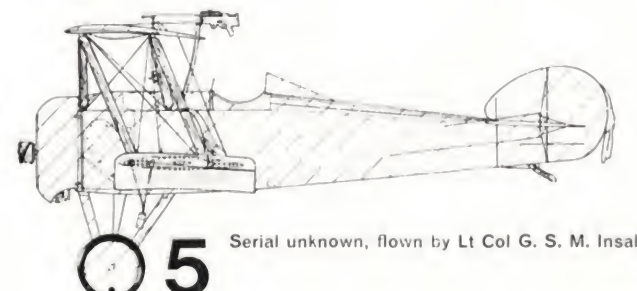


Cream wheel covers

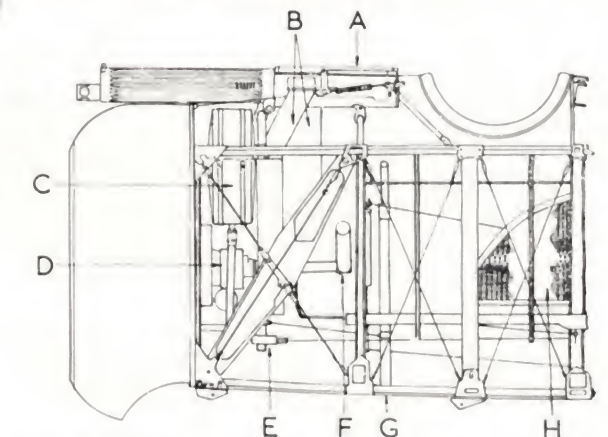
Grey cowling



Serial unknown, flown by
Capt H. W. Woollet, 43 Sqn



Serial unknown, flown by Lt Col G. S. M. Insall



Index to enlarged cockpit view: A—Vickers guns (with Sopwith Kauper synchronisation). Note Aldis sight. B—Feed trays and ejection chutes. C—Oil tank. D—Carburettor. E—Rudder bar. F—Oil filler pipe. G—Joystick. H—Seat.

'SWEEP SEAHAWK'

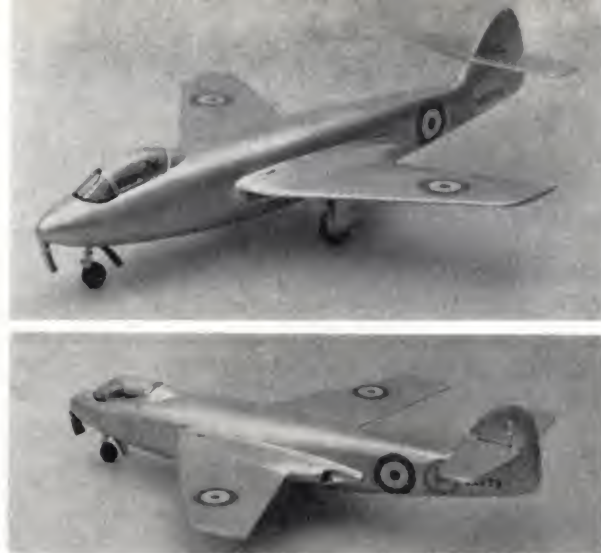
HAWKER P1052 CONVERSION

BY S. J. KIRBY

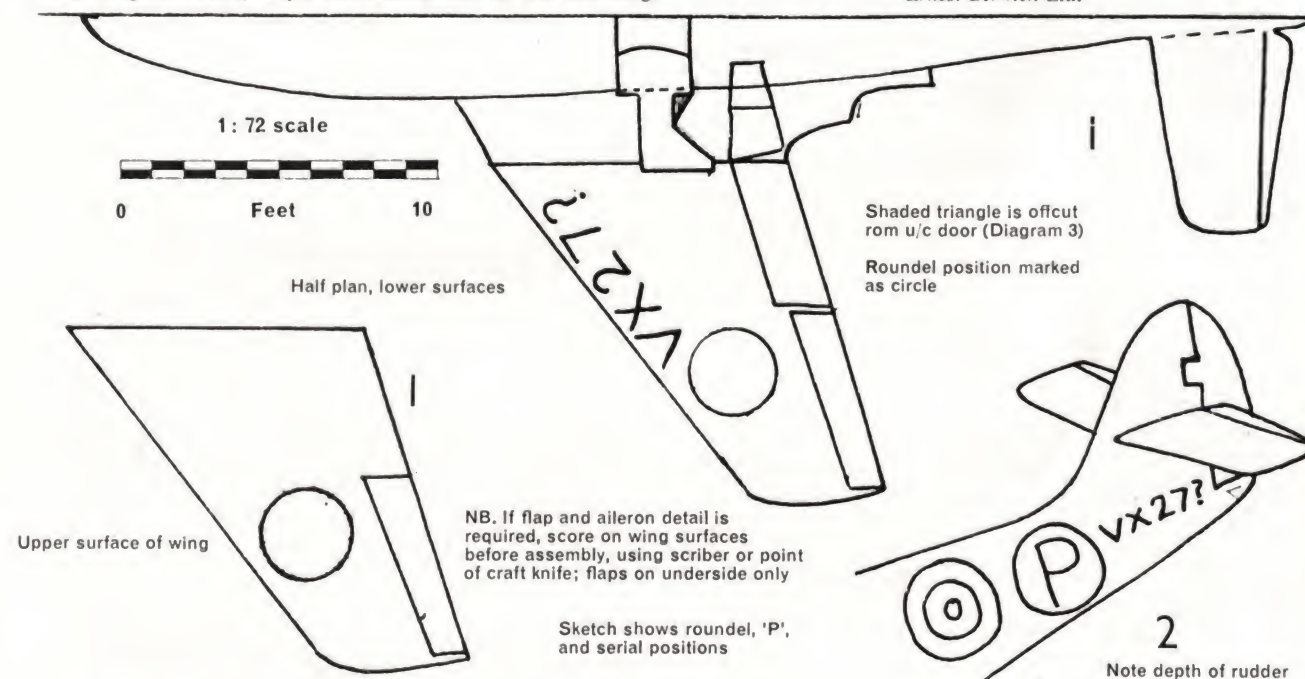
ANYONE wanting to add another Hawker aircraft type to his collection should consider that very neat little experimental jet aircraft, the P1052. It was a development of the Seahawk, but had swept wings and no bullet fairing on the tailplane/fin intersection. A conversion from the Airfix Seahawk is quite easy. Only two aircraft of this type were built. The first was VX272, which had a natural metal finish and VX279, which was painted white all over.

Conversion work is as follows:

(1) **Fuselage:** Assemble the fuselage (omitting the arrester hook) and wing root stubs, as per instructions. Cut off the stub wings



Above: Two views of the P1052 conversion, depicting the all-silver VX272 first prototype. The 'P' prototype marking comes from the Hales/Yeoman RAF transfer sheet available from Jones Bros or Ernest Berwick Ltd.



outboard of the undercarriage bay and intakes, so that the distance between the outboard edges of both trimmed stubs is 1.55 inches.

(2) **Wings:** The wings can be made from wood or sheet plastic card. I used the latter, much less difficult than you might think. Try it and see. Make two pairs of top and bottom surfaces from the drawings (Diagram 1). Use .020 inch (20 thou) sheet. Now curve the wing panels carefully in pairs, on a round object, like a pencil, putting a shorter radius curve on the leading edge. See Diagram 4 for the shape of the upper and lower halves.

Now cement the wing halves together and let them dry. At this stage I found it a help to fix sticky tape round the leading and trailing edges and to fit a tapering balsa wood spar inside to hold the wing in shape. (See Diagram 4). When you are sure that the whole lot is correctly shaped, leave the assembly to dry thoroughly. If you do make a mistake it does not take long to cut out new wings from the plastic card.

(3) **The tail:** The bullet fairing must be removed from the tail-



Low angle view of the model shows the modified undercarriage. Nose should be weighted with Plasticine during construction to ensure model stands on its wheels.

AIRFIX magazine

plane/fin intersection. This is best achieved by making a series of trial fittings and trimming a small amount off at a time until a 'clean' intersection is obtained. (See Diagram 2). Then cement together the tailplane/fin assembly. I should point out here that the short fin is used from the kit.

(4) **Wing fitting:** When the wing assemblies are dry, they can be fitted to the wing roots. It may be necessary to squeeze together the now open ends of the stubs to obtain a decent fit. Cement the wings in position and let dry.

(5) **The undercarriage:** This needs little modification. Reshape the outer doors as shown in Diagram 3, cementing the small triangular offcut into the undercarriage bay as shown in Diagram 1.

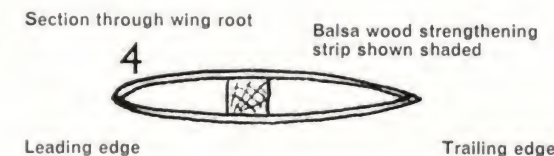
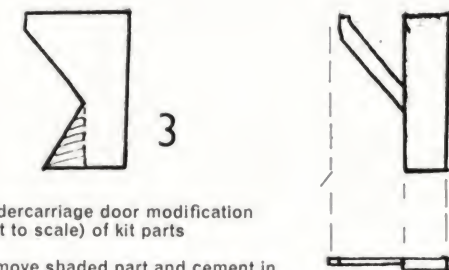
(6) **Remainder:** The wing roots may need cleaning up after the cement has dried. When this is done, the undercarriage and canopy can be assembled as per instruction sheet. The arrester hook recess should be filled with scrap plastic or body putty.

FINISHING

First prototype: paint the model silver all over. Serial number is VX272.

Second prototype: paint the model white all over. Serial number is VX279. The serials can be made up from Blick or any of the commercial transfer sheets now made.

For either aircraft apply $\frac{1}{8}$ inch roundels above and below the wings and on the fuselage sides just aft of the jet outlets. Apply a yellow 'P' in a yellow circle (from Hales RAF transfer sheet) just aft of the fuselage roundel, and the serial number aft of this, under the tailplane. The lettering should be $\frac{1}{8}$ inch high. Under the wings the serial numbers are $\frac{1}{8}$ inch high, parallel to the leading edge. See Diagrams 1 and 2 for locations of markings.



P1052, key dimensions
Span: 31 ft 6 in.
Length: 39 ft 7 in.
Undercarriage track: 8 ft 8 in.
Sweepback ($\frac{1}{4}$ chord): 35°.

Camels of the 'Aces' — from page 394

scale, however, it would not be possible to paint lettering this tiny, in any case. Just a touch of white 'dots' will suffice to indicate it.

Metal panels were natural silver, and this finish had been further enhanced by pattern riffling (ie, burnishing). The windscreen, which was of Naval type, was mounted in front of the gun feed blocks. Bomb rack hooks were fitted, as was a pump, mounted on the front starboard undercarriage leg. Wheel covers were plain cream matching the varnished linen undersides. The upper wing centre section had an enlarged cutout, with the same amount removed from behind the rear spar, although no tubing was retained.

(4) Captain H. W. Woollet was one of only two men to score six victories in one day while flying Camels (the other being Capt Trollope, also of 43 Sqn). Capt Woollet was a Flight Commander serving with 43 Sqn. The aircraft illustrated was one of the more colourful RFC Camels, the practice of painting aircraft in more distinctive colours usually being left to the RNAS. Rudder stripes were carried over to the fin, after turning through 90°, red emerging topmost. Serial was thus again obliterated. The fuselage roundels had the Squadron markings either side, these being two white diagonal bars, painted at about 60°. This marking was duplicated either side of the enlarged centre section cut-out, which retained the area of fabric behind the rear spar.

Brown streamers were carried half-way up the rear interplane struts. No pump was carried, but bomb rack hooks were fitted under the fuselage. The pilot's individual marking was applied to the wooden panel which formed the cockpit side. This consisted of a white ellipse bordered by two narrow white lines, the outer having four triangles mounted on it. The emblem itself was a two-legged dragon and a spear on a rectangular base, the whole being painted green. It is shown as an enlargement at Z. All metal panels were painted grey, as were the propeller blades. The hub, which had a black semicircular spinner fitted, was brown.

(5) Captain G. S. M. Insall won his VC flying Gunbuses with No 11 Sqn. He eventually flew this night-fighter Camel of No 51 Sqn when serving as a wing commander. Flare brackets and landing lights were carried on the nearest outboard rib to the interplane struts. The fuselage itself had the cockpit moved further back, the height in front of this was reduced and a small flat windscreen of the Avro type fitted. A head-rest was also in evidence, this being slightly longer than usual. The fuel filler holes for the BE 2 petrol tank were directly under the centre section, which had an enlarged cut-out area. The capping strips for the two outer ribs were not

removed.

The only insignia carried were wing roundels, those on the upper surface having the white area overpainted with brown dope. All khaki-green fabric areas of the fuselage, including fin and rudder, were extremely pale, as if the original doped surface had been scrubbed until the white of the fabric showed through. Metal and ply surfaces were normal dark brown. Brown cloth streamers were carried on the interplane struts, and one on the rudder. Two Lewis guns were mounted on the centre section, as permanent fixtures, retaining their cooling jackets but not their handles. The fore-ends of the barrels were mounted above the rear spar. The action body was mounted on metal straps, which were fixed at the rear of the centre section. A pump was carried on the rear starboard centre section strut. The oval plates did not have ejection holes.

All these Camels had the usual khaki-green upper surfaces and clear doped undersurfaces as will be seen from the drawings. Though colours of the metal panels varied, the ply panels were usually brown, wing struts were varnished wood, undercarriage struts and axle fairings, brown. The appropriate colours in the Humbrol Authentic colours World War 1 range are about the best on the market for these models, but they do not include the Naval top surface dope, which is best described as being a colour not unlike that of a dark green bottle full of muddy water. This can be mixed by adding a fair amount of green to the original Humbrol khaki-green.

Roundels can be used from the Camel kit, unless you have better ones (eg, Micro Decals) for this period. Similarly the squadron markings can be quite simply cut and applied from De Frey white sheet transfer, while the personal emblems for drawings 2 and 4 can be painted on white transfer sheet (pencil the outline first).

Finally, I would like to proffer grateful thanks to Mr E. Hine of the Imperial War Museum and Mr E. F. Cheeseman for their help in the preparation of this article.

Below: Le Rhone-engined Camels converted to 'back seat' night-fighters by 44 Sqn personnel with whom they are pictured (Photo by E. F. Cheeseman).



ROMAN FRIENDS AND FOES

BY BOB O'BRIEN



Part 8: The Picts

A NUMBER of factors prevented the Romans from carrying out a permanent advance and colonisation of the rest of Britain North of the Forth-Clyde line: the inhospitable climate, the character of the land itself (giving sparse crops), and the Picts who were generally implacable enemies of Rome and held out in the mountains and valleys of the Highlands, so that they were never finally subdued. This does not mean that a Pictish army could stand up in the open field to a Roman one, unless the odds were greatly in its favour, as Roman weapons, discipline and organisation would prevail, but in country of their own choosing, in ambushes and sudden raids on frontier forts and settlements, the Picts were a force to be reckoned with.

The establishment of Roman forts, the Antonine Wall, and the better known Hadrian's Wall, were barriers to the Picts and others like them, and must have checked the national sport of cattle raiding. So the Picts took it out on the Romans and those tribes who sided with them. They learnt to by-pass the Wall by using their light boats, skin covered and similar to an Irish Curragh, to slip along the coast and land south of the frontier zone to carry on their raiding and plundering from there,

returning with the booty in the same light handy boats. These raids, varying from individual exploits to mass invasions, continued right through the period of Roman rule in Britain, and a great raid in AD 367 took them down to the Midlands in company with Saxon raiders and Scotti from Ireland.

The majority of Pict warriors would be naked, or else wear a small loin cloth. They also wore a short hooded cloak to the hips, plaid, and often made of catskins. Generally they were armed with a 7 ft heavy thrusting spear, and a long dagger or small sword. The few archers would have bow and dagger only, and would fire kneeling from cover, with the hood of the cloak pulled up.

Chiefs and nobles would be somewhat better covered, with a long sleeved tunic to the knees, and wearing slippers while the majority of the warriors went barefoot. They carried sword and spear, and the chief could be shown with a heavy silver necklace.

All the above except the archer carried small square, or slightly rectangular shields, made of oxhide stretched on crossed sticks. Some had wood shields. All Picts would have blue tattoos in curly patterns.

The Picts did not use chariots, but had numbers of light cavalry on ponies. The horsemen would be mainly nobles, dressed and armed in the same way

some would be warriors with loin cloth and cloak only. Depending on the terrain and circumstances the cavalry would be just as likely to dismount and fight on foot. The ponies had long saddle cloths.

Conversions

The normal warrior types can be converted from the natives in the Tarzan set, with very little trouble. The shield of the standing figure is cut down to approximately square shape, and the head replaced by a Robin Hood type shaggy head, with extra Plasticine hair and a long pointed beard added. The spear in this figure can be left as it is, and finally a cloak of Plasticine is added. The other figure with arm raised and shield arm forward is given the same treatment except that in this case a shield is made up from plastic card (10 or 20 thou) about 6/7 mm square, drilled in the centre and fitted to the left hand. The plastic spear on this figure is best replaced by a brass pin with the point flattened to represent a blade. The spear should be 25/30 mm long. While this gives a more realistic appearance, you could, of course, leave the original plastic spear as it is.

Chiefs and nobles are made from suitable Robin Hood types with the addition of cloaks and shields as for the warriors, and spears are added from pins. The two shown in the picture are made from the thrusting billman and the archer who is reaching behind him for an arrow. In each case the plastic weapon is cut away and the figure cleaned up before adding a longer beard and long hair from either Plasticine or modelling paste. In this connection I have always found Plasticine better to



Above, left: Five examples of Pict types all converted from standard Airfix figures as described in text. This group features (from left), a bowman, a standard bearer, a warrior, a chief, and a noble. The blue 'woad' pattern on the skin is clearly seen. Above, right: A model Pict raiding boat with two warrior types as crew, made as described in text. Also shown is a mounted noble though the Picts also had a few mounted warriors.

work and form into shapes for beards, etc, and provided it is 'set' with banana oil or similar varnish it will retain its shape. The standard bearer is dressed like a chief and carries a standard in the form of a gilt figure of an animal—mine represents a cat of sorts (carved from scrap plastic), but those with better carving ability than I can try their hands at birds or any other animal that takes their fancy.

The archer figure is made from the standing Tarzan set native with spear cut off, and the shield cut away from the left arm. A cloak and Robin Hood type head are added as in the other figures, and the bow, about 20 mm long, is made from wire and shown as tucked under his left arm. This makes a change from the usual representation of an archer continually at full stretch, but the standing Red Indian archer can be similarly converted for those who wish to show more action.

The cavalryman is made from the Robin Hood swordsman in cloak with the legs of the bare-legged Red Indian rider. The lower part of the tunic is built up from Plasticine after the rider has been mounted on a Red Indian set pony. This animal should be given a long saddle cloth made from model aircraft tissue glued on and set with

banana oil. The rider should be fixed by both glueing to the pony, and by using a short pin with the head cut off as a support holding both parts of the rider together, going right through into his mount. Spear, shield, and longer hair and beard are added as in the foot figures.

The boat shown with two figures is intended to represent as well as possible, the type of light skin covered vessel used by the Picts and others on their raids and expeditions, and is made simply from four pieces of plastic sheet as shown in the sketch plan. This is intended to be a waterline model for use in wargaming if required, so has been kept simple, with no interior frame. The sitting figure is the canoe paddler from the Tarzan set, with cloak, Robin Hood head and long hair added, and is shown as having just shipped his oar as the boat comes into the shore while his companion watches ahead.

Picts should be painted mainly as fair, or with red hair, with only the occasional one dark. Shields have geometric patterns in differing colours, mainly primary, but the cloaks can be painted to represent patterned plaid, or left in whatever colours natural catskins might be—Humbrol do not market a Tabby shade, but seriously anything from

sandy brown to grey/black would suit. The nobles' and chiefs' shields had more elaborate patterns than the rank and file, who would content themselves with a single motif in most cases. Examples are shown in the sketches. The woad is applied with a very fine brush, using matt blue, and trying to make the patterns writhe and twist as much as possible. The boat is painted track colour inside, and black/brown outside. The figures have been permanently fixed in this example, but for wargaming purposes they would need to be removable. A seaborne cattle raiding party might make the basis of a very interesting wargame using comparatively few figures, but making sure that the rules contained provision for surprise moves and some concealment.

The forthcoming Airfix Roman Fort will also, of course make a very authentic setting for a Roman-Pict wargame.

For most of the information on Pictish clothing, weapons and shields I am indebted to an old friend (and wargame enemy), Phil Barker of Birmingham, a fellow member of the Ancient Wargames Research Group which has just produced a set of new rules for Ancient Warfare reviewed elsewhere in this issue.*

*See page 392

Sailplan—from page 393

Preformed ratlines and shrouds As supplied with sailing ship kits, these save all the tedium which can sometimes depress even the most dedicated modeller in a long session of making scale shrouds or fixing ratlines from scratch. But quite a lot of realism can be added when using them by a few simple alterations. First cut them from the kit pattern across the top and down the sides, but ignore the instruction to cut across the bottom and leave the ends long. Then sew at least one loop of thread—more if you like—on to the narrow top ends of the preformed shrouds, holding them by a touch of adhesive. The assemblies can then be fitted just like proper shrouds, with the loops going over the masthead and the long tail ends being turned round the deadeyes (which have already been 'backed' as shown in Fig 13 in Part 3) and seized.

Blocks These have been mentioned many times in describing the running rigging in Part 2, and about 200 would be used in rigging the 1600 period three-master shown in Fig 1 of this series. Seven

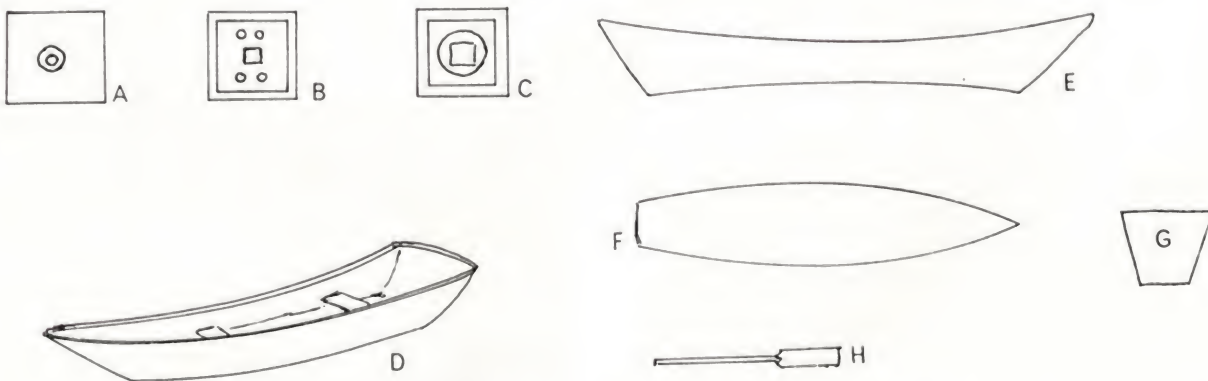
different types of block are used in this rig, and I have shown them in Fig 21. The most common is the single block with a single eye (a), but some applications call for a single block with two eyes (b), and occasionally a double block with a single eye (c) is used. The fiddle or sister block (d) has special uses, and so has its relative with the single eye (e), while bullseyes for linking several ropes at a common point can be either single (f) or double like a figure of eight (g). Multi-sheave blocks, in common use on clippers and later ships, were almost unknown in the 17th century.

I must admit that I have never found an effective way of making blocks from plastic; the block itself might not present much difficulty if the scale were large enough, but the strop around it is very much more difficult. Scale is the enemy here, since the bunt, clew and leech line blocks are rarely more than 6 inches across in full size practice, and their scale size at 1:96 must often be about 1/16 of an inch. They can, however, be made quite successfully from wood, since a strip 1/16 of

an inch square can be shaped and drilled as shown in Fig 22 and then parted off. Here again the strop is the problem, but if the wooden block has its corners nicked as shown it may be possible to glue a thread or fine wire around it and form it into a loop, though I have never managed it very successfully myself.

However, at the scale of these Airfix models, ie, 1:120 or smaller, blocks can be successfully represented by blobs of Durofix or Seccotine. The rigging line is knotted where the block will come (to another rigging line, round a yard or wherever) and the adhesive placed over the knot. When the blobs are almost dry and set they can be squeezed into a shape giving a very fair semblance of a block. The effect is better if they are given a touch of dark brown or black paint so that they stand out against the lighter colours of the sails and rigging ropes.

Part 5 of this series will deal with the last few items of full size practice which make such a difference when applied to a model.



Key to drawings: (A) Pict warrior's shield design. (B,C) Alternative designs for Pict nobles' shields. (D) General appearance of Pict raiding boat. (E) Boat sides, two required. (F) Boat base. (G) Boat stern. (H) Oar for boat. Drawings E-G full-size for Airfix figures.



General view of the completed station with the Lilliput Styrian Government Railways 0-6-2T bringing a train of Playcraft 'toast rack' coaches into the platform. Note use of standard Airfix fencing.

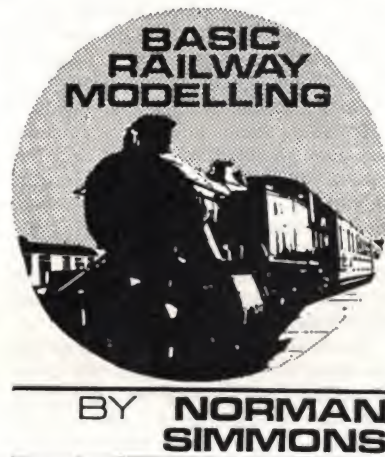
Station in narrow gauge

ONE of the main advantages of OO-9 narrow gauge is that although it opens up a new dimension in railway modelling there is already a wide range of accessories available since most of the vast range of OO/HO building kits and lineside accessories can be adapted to narrow gauge use. This is particularly true of the passenger station.

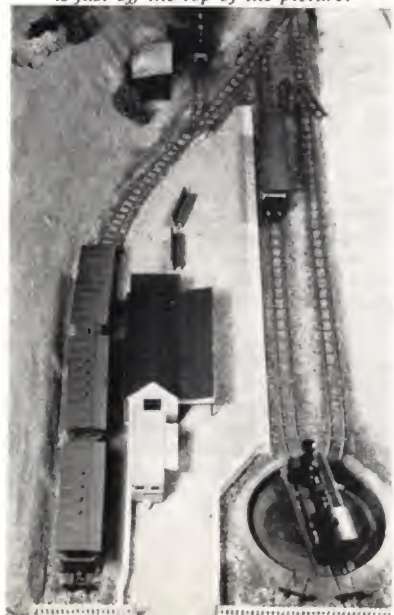
A narrow gauge station can of course be of any size, shape and form and just about everything can be left to choice, even including such basic things as platforms. Some systems such as the Vale of Rheidol have stations with no trace of a platform at all. Others such as the Talylllyn have the edge of the platform clearly defined with a line of stone paving raised above the rail level. At the fullest extent, most of the Irish 3 ft gauge systems had relatively high brick built platforms just like the standard gauge stations we are used to.

I decided I would like to have a low platform of some sort for my station if only to define the station limits and to present a tidy appearance. After trying different thicknesses of various sheet materials I settled on $\frac{1}{8}$ inch sheet balsa. When glued to the baseboard it comes just above the level of the top of the rail and, perhaps what is more important, brings the ground level to within comfortable stepping distance of the footboards of my Playcraft and Eggerbahn rolling stock. Copydex was found to be an ideal adhesive for gluing the balsa platform in place. I brought the platform edge to within $\frac{1}{2}$ inch of the centre line of the track and this appears to be a reasonable standard with which to work. Curved platforms are no trouble at the height I have chosen since the long wheelbase vehicles simply overhang the platform edge.

I was in too much of a hurry to fix the platform in place and as a result I did not use anything to face the edge of the balsa sheet. I have had to make do with a



Below: Aerial view of the station layout, which is based on Plan B, page 55, October 1968 issue. Note the points already in place for the goods yard siding which is to go on the right of the picture. A right-hand turnout could be substituted for the turntable if desired, keeping work even simpler. Engine shed (see last issue) is just off the top of the picture.



coat of paint but I think it might have been more realistic to have faced the edge of the platform with a strip of brick or stone paper before the platform was glued in place. However, a strip of card scored to represent paving stones was glued on the top surface at the platform edge.

I think it unlikely that any narrow gauge platforms are fully paved as otherwise the Airfix platform surfaces

could be used. It is more usual to find a simple gravel, ash or possibly tarmac surface and this can be represented by a sprinkling of the appropriate scenic dressing. Alternatively sand, glass or emery paper can be used. It is not a bad idea to put some patches of a different material in one or two places as it is my experience that most platforms, standard or narrow gauge, are far from uniform in appearance. Extensions and alterations at different times leave their mark and there often is the necessity to dig up the surface to reach service pipes below and the inevitable patch is left to mark the spot.

Station buildings can be anything from a grand multi-storey edifice to a simple hut depending largely on the nature of the line you are representing and the space you have available. I think it is important first to decide what facilities you want. I decided that my terminal station was going to represent the top end of the system and that the main administrative offices would be out of sight at the other end of the line. I decided I wanted to provide a small booking office, a shelter of some sort and a 'gents' toilet.

The Airfix Booking Hall was considered but I decided that this was perhaps a little too grand and it took up more space than I had comfortable room for. A simple timber built structure was what I was looking for and I found this in the Coal Office from the Airfix Trackside Accessories kit. I have used two of these buildings taken from two kits. Basically, the two Coal Offices are joined end to end, the front of one being cut away to provide a reasonably spacious shelter. Public access to the booking office is inside the shelter and an extra window-wall (Part No 28) was fitted to the office at this point. The window was adapted to make it look like a typical booking office window.

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Above: Two views of the completed station buildings, made from Airfix coal offices as described in this article. Note the platform treatment, and also the track and ballast (on right) suitably 'dirtied' with 'track colour' paint. Coaches in the bay road are the Lilliput Styrian Government models reviewed this month on page 416. The embankment in the background is from Mod-Roc.

No particular comment is called for in the construction of this building since the parts largely fall into place. Great care was taken when cementing the ends of walls and roof together where the two separate buildings join to ensure that the joins were made as unobtrusive as possible. Construction was helped considerably by cementing the building to a 20 thou plastic card base. A base such as this is in any case essential since a form of flooring is required for the open shelter. A hole was cut in the floor in the area occupied by the office so that the windows could be installed after painting. The gents toilet was a simple box structure built out of 40 thou plastic card scribed to represent 6 inch planking with vertical corner pieces made from 20 thou strips. No windows were installed in this structure but a gap was left between the tops of the walls and the roof for ventilation. The door came from the parts left over from the second Coal Office.

The drainpipes were repositioned and instead of fitting them to the front and back of the building they were fitted at the office end only, one to each gutter. The fixing holes in the front and back walls intended for the drainpipes were filled in with Humbrol plastic putty. Small box-like drains made out of strips of plastic card were fitted at the base of each drainpipe. A spare drainpipe from the second kit provided enough material to make a stove pipe for the office stove.

The platform awning was an after-thought and was largely inspired by the shape of the name board supports I saw lying about on my work bench after I had emptied a packet of Airfix Platform Fittings. I was using the fencing for the platform and station yard and one of the platform seats was earmarked for furnishing the passenger shelter. Inverted, the nameboard supports reminded me very much of the distinctive shape of the awning supports fitted to the Kent & East Sussex Railway stations. The awning was quickly knocked up with a piece of 40 thou plastic card the length of the building

and 20 mm wide forming the roof, while the sides were made with an 8 mm wide strip cut from the side walls (part 12 or 13) from the Airfix Platform Canopy kit. Six equally spaced narrow strips of 20 thou card cemented on the top of the awning break up the otherwise dull roof area. They also act as supports for the back since they rest on the top of the gutter—hardly good architectural practice I imagine but it provided a speedy solution in my case. The awning is supported at the front by the fore-mentioned inverted nameboard supports.

If I was making the model again I would cement them a little lower down on the awning side to show more of the delta shaped brackets at the top and also to give a little extra height to the posts. I would also make sure I had some positive locating point drilled in the platform to receive the base of the posts. I relied on the glue holding the scenic dressing for the platform surface as a means of fixing the awning support posts and of course the inevitable happened while the glue was drying—the posts got out of alignment. It was difficult making adjustments as the scenic dressing—I was using fine granite chippings—was working its way under the posts.

Incidentally, the fine granite chippings as sold by Eames of Reading make a realistic stone or gravel surface when well tamped down and rolled in. I used



Above: Close-up view of the superb Lilliput Styrian Government Railways 0-6-2T on the turntable. Full review of this splendid model, best yet in the narrow gauge field, appears this month on page 416.

a Matchbox model steam-roller for the rolling operation and found this absolutely ideal.

There are many details which could be added and probably will be, given time. Notice boards, posters, lamps, fire buckets, platform seats, telephone kiosk, telephone poles, all these will come later but I had not fitted them when the photos were taken. These scenic touches are one of the delights of railway modelling. So many small points which add realism to a layout can be added as time and funds permit and as ideas come to mind. If you are modelling a predominantly passenger, tourist type of line, refreshment facilities will probably be called for or even a souvenir shop. The Airfix Kiosks and Platform Steps kit includes an excellent kiosk and bookstall which would not look out of place. I was lucky recently in being able to buy one of the now withdrawn Lesney Matchbox Mobile Canteens, Model No 74, and this sits comfortably in the station approach.

KITS RE-ISSUED

GOOD news for model railway enthusiasts is that Airfix have now re-introduced two of the most popular railway wagon kits which were withdrawn two or three years ago. The two kits in question are the 16 ton Mineral Wagon and the Esso Tank Wagon which will in future be available on a 'limited production' basis. In other words they will mainly be sold by model shops.

The 16 ton Mineral Wagon is an accurate OO replica of the standard BR steel goods wagon while the Esso Tank Wagon is an example of a standard type of bulk fuel tanker also used on British Railways. Each kit is complete with dummy 'scale' couplings and working Airfix-type automatic couplings, though it is also a simple matter to fit Triang or Peco couplings or even working scale couplings. Wheels, transfers, and instruction sheet are also included in each kit. Both kits are now in the Series 2 price range, at 3s 9d each.

BREAKDOWN LANDROVER

By Michael Address

A VERY typical vehicle seen these days is the Landrover recovery truck and the prototype shown seems a fairly typical example. In model form, such a vehicle is easy and makes a nice addition to the lineside scene.

I used the Landrover from the Airfix Bristol Bloodhound kit for my model. This is not really an extravagance as I plan to use some of the trailer parts to make either one 4-wheel or two 2-wheel civilian trailers. The figures can also be converted to civilians and I particularly like the dog from this set. As usual I pre-painted many of the parts for convenience and neatness.

Start the conversion with the sides (Parts 16 and 22). Cut away a rectangle 18 mm long and 9½ mm high from the upper back part of each side. This is most easily done using a razor saw. Smooth away any roughness this leaves with a fine file. In the kit the front part of the floor (part 17) is solid. The appearance can be improved by cutting out a rectangle 10½ mm by 3 mm from immediately behind the front bumper bar. This leaves a piece 1 mm wide at either side representing the front end of each main frame. To cut this rectangle away drill two or three holes and then cut away the plastic between them with a sharp modelling knife. File away any excess to leave a neat rectangular opening.

The two sides (parts 16 and 22) together with the radiator (part 18), the cab front (part 19), and the bonnet (part 29) can now be cemented to the floor, remembering to fit the axles as you fix the second side in place. Take care when cementing these parts together to get as good a fit as possible so that there are no unsightly grooves or ridges where they join. At this stage I added a seat; merely a piece of plastic card supported at each end by a piece of scrap plastic. If you wish, add windows of thin transparent plastic glued behind the window openings; in fact it is not very noticeable if you leave the windows unglazed. I fitted a steering wheel (a left-over from a Matador conversion) on a column of scrap plastic.



Rear view of completed conversion; compare with prototype picture on page 406. Model is also shown at head of page.

The two small windows in the cab back (part 28) are made into a single large window by cutting away the dividing bar and the window is glazed if desired. I cut away the cab back at the bottom (removing extra at the sides to clear the rear wheel housings) so that its top came level with the tops of the sides. However, when I came to fit the roof I found this left a small gap, and it would be neater to cut the cab back down slightly less so that its top extends ½ mm above the sides. This also puts the window slightly higher which is more accurate. Cement the cab back in position. Next cut away the rear part of the roof (part 27) so that the rear edge of the roof is flush with the cab back. If you have left a little extra at the top of the cab back trim away each side to fit neatly beneath the back of the roof. If on the other hand, you have done as I did, and have cut the back down so that its top is flush with the tops of the sides, it will be necessary to fill in the gap with a piece of plastic card after cementing the roof in place. File and sand the join smooth before painting.

The rear wheel housings are boxed in, using 10 thou thick plastic card, each with an upright piece 3½ mm high glued to the inner side of the wheel housing, and a horizontal piece 4 mm wide cemented to the top edge across to the inner surface of the body side. Each piece is 18 mm long which brings the rear ends flush with the rear edges of the body sides. The back is cut from 20 thou thick plastic card to the pattern



shown actual size in Fig 1, and cemented in place across the rear ends of the sides; fill in the gap left between the floor and the back with a piece of scrap plastic.

The two sides of the crane framework are built up from strips of 20 thou thick plastic card to the plan shown in Fig 2. Make two sides (remember they will be mirror images of each other, not



identical) and join them with four pieces of 20 thou thick, 1 mm wide plastic card strip, so that the width of the crane framework will measure 9 mm from outer surface to outer surface. The gear wheel is an old watch gear, 6 mm in diameter. I cut a piece from the upper part of a trunnion (part 58) from an Airfix Matador kit, and used this for the winding drum. The gear wheel was mounted on this and the drum fixed to the crane framework in the position shown (d) in Fig 2. A sliver of scrap plastic glued to the frame just above this represents the winding handle, and its axle is a piece of scrap plastic fixed between the frames. The pulley is a slice left from the threaded part of the trunnion and small pieces of plastic card form its support. Any other plastic scrap could be used, of course.

At this stage the crane can be painted and then fitted in place on the vehicle. For the frame (which I presume is an awning support) at the back of the vehicle I used a length of 15 amp fuse wire, carefully smoothing out any kinks beforehand. The frame is about 10 mm high at the sides (that is the height above the top of the sides) and then arches gently across above the crane. The dimensions are not too critical; use the prototype photos as your guide. Leave a little extra at the bottom of each upright length to affix the frame to the bodywork in the angles between the

Continued on page 406

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SHORT-NOSE FREIGHTER



Conversion by Alan W Hall

THE Airfix kit of the Bristol Superfreighter has been with us for a long time and still compares well with newer kits on the market today. Little has been written about the aircraft recently apart from an exceptionally good series in the magazine *Aircraft Illustrated*, though the model is ideal material for both the civil and military modeller to convert.

Either of the variants, the Mk 21 or 31 provide ample material for making an interesting conversion. As most readers are predominantly interested in military aircraft models I have chosen the version supplied to the Royal New Zealand Air Force though there were several other military versions that could be produced. The Royal Canadian Air Force, the Pakistan Air Force, Iraqi Air Force, Burmese Air Force and even the RAF have at one time or another used the Bristol Freighter.

Those supplied to the RNZAF were Mk 31Ms. The first, NZ5902, was delivered in November 1951, going to No 41 Squadron in the first instance, but like so many of the other Freighters supplied to New Zealand was loaned to SAFE, the domestic airline for a period. This aircraft is still on active duty at the moment and was last heard of flying from RAF Changi, Singapore.

In all 12 Freighter Mk 31Ms were delivered to the RNZAF the last going out on March 20, 1955. As almost every one has seen service with civil airlines as well as the military it is not surprising that their markings now show a fair amount of variation. To anyone researching a subject like this, without a great abundance of good pictures available, the choice of accurate colour scheme becomes difficult as nearly every example turned up in books and photographs appears to be different! I have, however, standardised on NZ5910 as being a fairly typical representation and Richard Gardner has produced a side view illustration which shows the major points. Space restrictions unfortunately limit a 1:72 scale drawing of this size but having built the model from these plans, I can say that there is sufficient information shown from which to work.

The conversion work is not difficult. It involves making a new nose, moulding a nose transparency and building a new fin. The wings, apart from the addition of some small acrials are straight from the kit and there are no new mods needed on the tailplanes.

STAGE 1 The first task in making this model is to either fill in or cut out various fuselage windows to match the arrangement shown in the drawing. You will find that by leaving some out and adding others there will be sufficient transparencies supplied with the kit without going to the spares box. To fill in windows I first stuck the transparency in place and left it to dry thoroughly. Plenty of cement was applied as it did not matter if this went over the edges a little. The slight recess was then filled from the outside with plastic wood or plastic putty and rubbed down smooth when dry. A thin coat of filler at a later stage completes the operation and if care is taken the original window outline will be indistinguishable from the rest of the fuselage. To cut out new windows I marked the positions of each with pencil and used a small drill to go from the corners of the area round the square with a succession of holes, removing

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the unwanted part in this way. The aperture was then cleaned up with a knife and file to match the others and the transparency fitted. Luckily the windows are square as otherwise this would be a more difficult job.

STAGE 2 The cockpit detailing is stuck in place and the fuselage halves joined. All fuselage windows were masked with squares of Sellotape at this stage so that they would not get damaged during subsequent operations. The wings, engines and undercarriage can be assembled at any time as there will be several periods when the modeller will have to wait for other items to dry out.



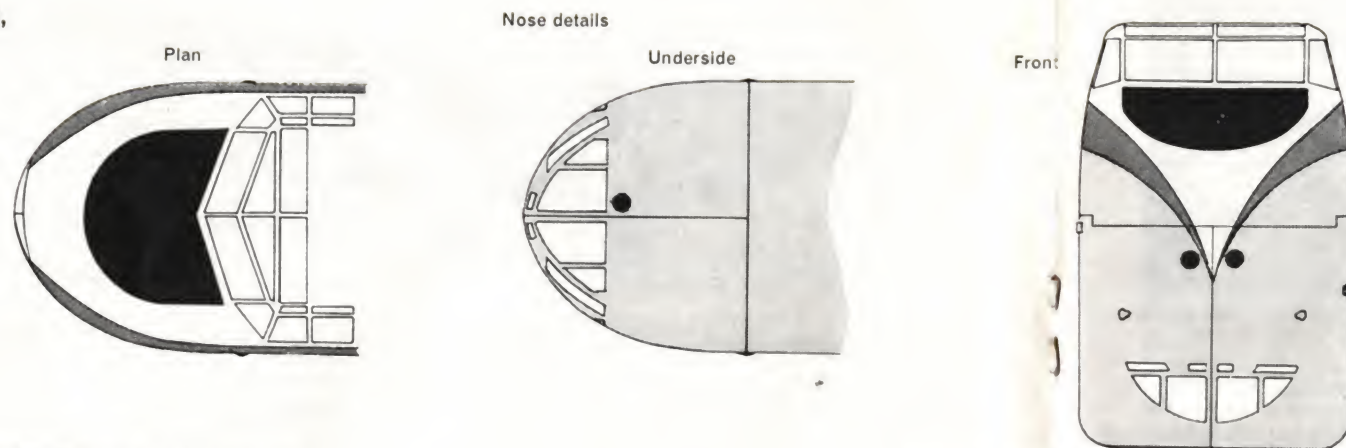
STAGE 3 Cut off the existing nose on a line ⅜ inch forward of the cockpit coaming. This should pass through the front edge of the first fuselage windows which should have been left without transparencies inserted. In order to provide a better 'key' for the rest of the new nose I cut a small strip of balsa which fitted from one window to the other across the fuselage width and stuck this in place before applying the bulk of the new nose. The latter is cut from a block of balsa 1½ inches wide by 2 inches by 1 inch. I found it best to have the wood grain running across the width of the fuselage instead of lengthwise. This block is attached as soon as practicable after the strengthener has dried out. Polystyrene cement was used.

STAGE 4 While waiting for the nose to dry I cut out the new fin, shaped it and also worked on the kit rudder to slightly change its shape at the top. The step which exists for the kit fin cannot be ignored and I had to cut out a step in the new fin to accommodate it. After glueing, the base of the fin is filled with a good amount of plastic wood to fair the unit into the fuselage. Both fin and rudder have to be stuck together at the join although the lower part of the fin can still fit into the existing locating hole at the base. The nose is then shaped with a knife and later with sandpaper and coarse file. Once the shape has been achieved it is given a final sanding with a smoother paper and this together with the fin are given a thick coating of talcum powder and clear dope filler. I also found that the fuselage joint lines were not too good and added a liberal amount of filler, both dope and plastic wood, to them at this stage. All parts were given a sanding when the filler had dried out.

STAGE 5 Modifications are required on the cockpit canopy as the Mk 31 Freighters had additional side windows not standard on the Superfreighter. To make the alteration I simply drilled out

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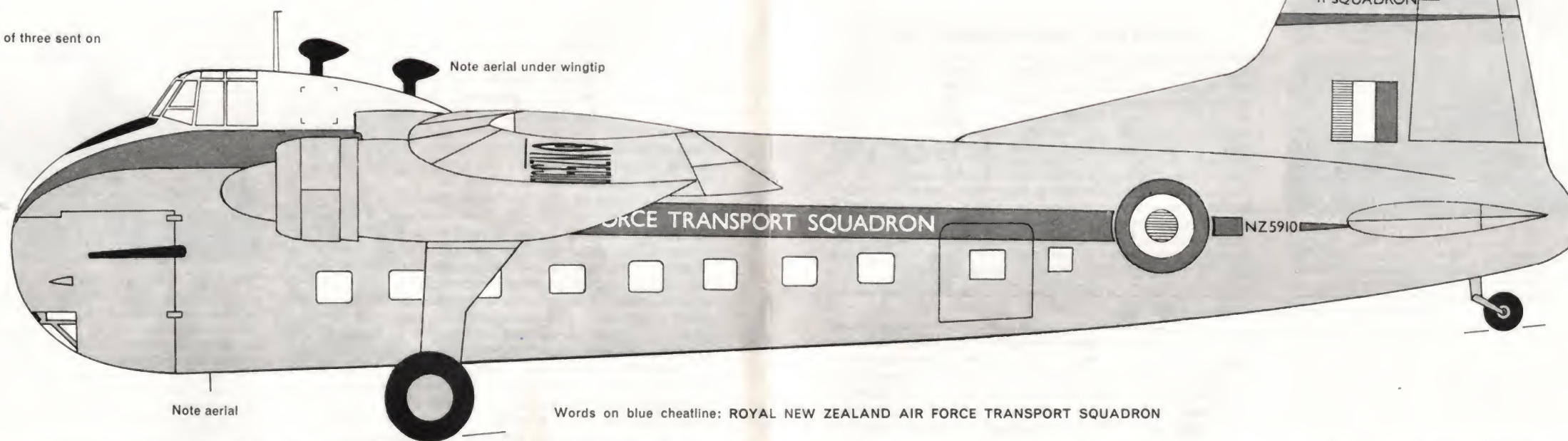
**Bristol Freighter Mk 31M,
41 Sqn., RNZAF**



Note: This aircraft was based at RAF Changi as a component of the Far East Air Force and used within FEAF to assist RAF units in support of ground forces during the Borneo 'confrontation', 1963-67

In 1962 this aircraft was one of three sent on detachment to Thailand

Drawings by Richard E. Gardner



Freighter—continued

the area required in a similar fashion to the fuselage windows and finished off with a knife and sandpaper. The new window came from a piece of acetate sheet which was stuck in position with Humbrol's new multi-purpose adhesive which I am finding a good substitute for UHU. The cockpit canopy which came with the kit was rather poorly moulded and did not fit as well as it might have done. It required a lot of cleaning up and I found that when fitted against the fuselage area also left a number of gaps. These were filled after the canopy had been stuck in place by body putty, left to dry and then shaped down with the rest of the new nose area which was ready, by that time, for sanding down after its second coat of filler. When dry and cleaned up I added a Sellotape mask over the cockpit canopy in a similar manner to the fuselage windows in order to keep it clean during subsequent operations.

Right: Stage 4 illustrated—putting on the new fin and modified rudder. Note how the original fin fairing is retained.



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Left: Stage 6—adding the nose transparency. This view also shows the formers used in moulding the nose glazing.

STAGE 6 When the nose was finished I marked off the area of the lower transparency and cut out the wedge shaped piece of balsa with a fine saw. This, as it already had a perfectly good covering of filler, sanded down as fine as possible, needed little additional work to make it into the male mould for casting the transparent replacement. A female mould was cut $\frac{1}{8}$ inch obechi, a piece of acetate sheet was heated over it and the male mould pressed through. I found that this was an easy canopy to make unlike some I have done recently and fitted very well into the area required. Before sticking it in place with multi-purpose adhesive I painted the area black and allowed this to dry.

STAGE 7 Final details are now added. Two D/F loops are needed and my spares box provided the second one. Radio aerials are required under the fuselage, behind the cockpit and on the

Continued on next page

Freighter—continued

wings tips. The tailwheel is stuck in place. Two small pieces of plastic card are stuck on to the fuselage nose on either side to represent the hinges of the opening nose doors. Another piece is also stuck on forward of these two, shaped according to the plan, and rubbed down when dry.



Left: Final stage on the nose is addition of the glazed section. Male and female formers for acetate moulding are also shown. Above: The completed model; blue cheatline is best painted by Sellotape masking.

STAGE 8 It should be noted that the wings are not stuck on until all of the painting is complete. Perhaps one of the most difficult of the operations in this conversion is the addition of the RNZAF Transport Squadron marking on the fuselage flash and as this cannot be done when the wings are in place they were left off until after the operation had been completed. The fit between the fuselage and the wings is excellent. Providing only a small amount of cement is used there should be no reason why the joint line is not invisible when finished.

PAINTING AND MARKINGS

With the fuselage windows blanked off with Sellotape there should be no trouble about painting over the whole lot with a large brush charged with silver. The area of the wings is large for a silver painted model and many will have difficulty in getting this perfect. Although I spray my models I still have to use a brush now and again and find that providing the paint is thin enough, a large enough brush is used. The area to be painted is absolutely free from dust and a second coat of very thinned down paint is given then a good silver finish can be achieved.

I preferred to paint the fuselage flash rather than use transfer sheet with the risk that this might come off at a later date. The lettering was done with Letraset or Blick rubbed down directly on to the model. Tail flashes were made from transfer and the national insignia which is exactly the same as RAF roundels came from the spares box. The serial was also made from Blick.



Above: NZ5906 at RAF Changi in 1967. Its paint scheme is similar to that of NZ5910 shown in the drawing (Photo by Peter March). Heading picture on page 403 shows NZ5909 in the original finish of the RNZAF Freighter fleet in 1953. This aircraft took part in the Coronation Review of the RAF, hence the high polish.

Breakdown Landrover—from page 402

sides and back.

The hook and the plate it is hooked on to when not in use are a little tricky to make but if you follow my method you can represent them reasonably well with a bit of care. I made the plate from 10 thou thick plastic card 11 mm by 2 mm. I bent a small U shape from a length of 5 amp fuse wire (it is easiest to bend the hook at one end of a length of wire and then cut off the excess wire) and attached to the end of a length of black thread. I fitted the hook through

the loop on the plate, then threaded the black thread through over the pulley and down to the drum. Holding the thread taut I cemented it to the pulley, where it passed over the wheel, and then glued it to the drum. When the glue is dry, trim the excess thread off with a sharp pair of scissors. I left the plate white but if you feel up to it you could paint diagonal red stripes across it



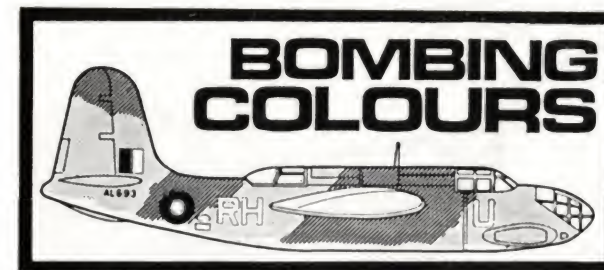
Landrover breakdown vehicle on which the model is based makes a useful item for any scenic layout—railway, roadway, or even airport.

before mounting it (see prototype photo). In the prototype the front bumper also has alternate red and white stripes. The final touch is the addition of number plates. Mine are cut from 10 thou plastic card, painted black, with letters and numbers from a Letraset sheet.

The colour scheme is up to you, but the model shown is a deep blue.

MILITARY PAINTINGS

NEW idea in military drawings are 'customised' prints which offer a choice of finishes to the purchaser. Produced by Denis Bishops & Associates, 86 Popes Grove, Twickenham, Middx, the initial release consists of a Priest, a M3 half-track, and a German experimental half-track each of which can be ordered in one of two colour schemes. Each print is coloured by hand and costs 50s (including postage). The Priest is available in 8th Army or US Army finish, the M3 in Israeli (1967) or US (1945) finish, and the German vehicle in Grey or Afrika Korps yellow. All come mounted ready for framing, complete with caption.



Part 2: Camouflage introduced

IN mid-1916 came the greatest and most fundamental change ever to affect the markings of British service aircraft, the introduction of camouflage. Not that forms of camouflage had not already been tried unofficially by some units. But now the standard 'colour' which had previously been natural linen, plain doped and varnished, was changed to a coloured finish, both as a means of camouflage and as a protective covering. This affected the application of all other markings.

Dope specifications and roundels

Hitherto, doping had been transparent to specifications decreed by the Royal Aircraft Factory. In 1916 instructions were issued that pigmented cellulose would be included as a final doping application, to upper and side surfaces, to two approved specifications, PC10 or PC12, with a final protective transparent varnish. The purpose was two-fold, to meet a need to exclude the harmful actinic rays of the sun from damaging the fabric (best quality Irish linen at that time), and to assist in the concealment of aircraft dispersed on airfields.

Both approved protectives had lampblack as their colour base; with PC10 yellow ochre was added, and with PC12 red iron oxide, producing khaki-green and chocolate brown finishes respectively if mixed in the intended proportions. Colour standards were not strictly adhered to and it is evident that a compromise mix was quite common. Undersurfaces were left natural linen as before, but with a final transparent varnish known as V114.

In general PC10 was usual for aircraft at home and PC12 overseas, the red oxide being more resistant to penetration by the sun's rays. Strangely, the RNAS favoured PC12 which was a camouflage more suited to land than sea, but no doubt the RFC in the field were quick to appreciate that, as a camouflage, the greenish PC10 was more suited to summer and the PC12 to winter.

National markings were by this time to a set standard that did not change until the second world war, but when displayed



Above: There were exceptions to every rule as shown by this BE 2c shot down by Lieutenant (later Hauptmann) Hans Joachim Buddecke. The serial of the BE 2c 2008 is marked across the rudder stripes (an exception in 1915, that became the rule later) and roundels are also marked on the tailplane, a practice that persisted in some squadrons until early 1917. This aircraft, flown to France August 10th 1915, served with No 8 Squadron (via Frank Yeoman).

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On camouflaged surfaces in 1916-1917 it was usual to mark roundels as large as the wing chord allowed, with a one-inch wide outline, as revealed by this FE (Air Historical Branch, MoD).

on camouflaged surfaces it was usual to outline the roundel in a white 1 inch thick surround.

Whereas in World War 2 roundels outlining was yellow and varied in thickness in 2 inch stages from 2 to 6 inches on bombers, in World War 1 the outlining was white and invariably of 1 inch thickness irrespective of roundel diameter. Furthermore, unlike the World War 2 period when roundel size was conditioned to 54 inches diameter maximum, in World War 1 diameter was in many cases conditioned only by the size of the wing chord.

Squadron markings remained unchanged in form but, of course, the black bars introduced on the BE bombing and reconnaissance aircraft in April 1916 to denote their squadrons (see Part I, April issue) had to be changed to white on the new darkened surfaces.

Serials

Hitherto numbers had been marked black on British service aircraft, but on the new camouflaged surfaces this did not show up. Some manufacturers, nevertheless, persisted in painting the numbers black. Others outlined the black letters in white, while Sopwiths commenced using a white rectangular box at the rear of the fuselage for their numbering, and left the fin in clear dope but carrying their trade name. Other firms changed the number presentation to white, but the Aircraft Manufacturing Company, producing De Havilland designs, followed the practice of painting serials on the rudder stripes.

Different firms, then, had characteristic ways of presenting their serial marking, which was not standardised as in the second world war, and one aircraft type could be produced by more than ten different contractors. It is not always appreciated, incidentally, that there were more plants in Britain producing complete airframes in World War 1 than in World War 2.

Apart from their presentation the character of the serial numbers was changing. When 10000 was reached prefix letters were introduced, and numbers started again at No 1, prefixed by the letter 'A'. First machines with numbers in the new series were a batch of aircraft used as bombers—FE 2ds 'A1' to 'A40'. The first, delivered in mid-1916, had Rolls Royce Eagle engine 1/250/7WD6149 (ie, the 7th Mk I 250 hp Rolls Royce with the War Department engine serial number 6149) and served in No 20 Squadron until captured by the Germans on May 7, 1917.

However, while RFC aircraft were numbered in a 1-9999 range with A, B, D and E prefixes, RNAS aircraft were given

Continued on next page

Bombing Colours — continued

an N prefix thereby making a clear distinction between military and naval aircraft.

Bomber types

Typical of the make-shift bombers of the mid-war years, both the BE 12 (basically a re-engined single-seat BE 2c) and the Martinsyde Elephant were initially ordered and produced as fighters, at which task they were found wanting so were subsequently used as bombers. Both types had clear finishes on initial production and were camouflaged with PC10 later, either in production or in service.

The introduction of camouflage initially brought anomalies which were manifest on these bombers of 1916. It was not unusual for squadrons to hold uncamouflaged and camouflaged aircraft, and even single aircraft with some components in dark finish and others in light.

The Martinsyde Elephants were of two types—the G100 and G102 with 120 and 160 hp Beardmore engines respectively. Their serial numbers were a guide to the type as follows:

4735	G100 Prototype	A1561-1610	G102
7258-7307	G100	A3935-4004	G102
7459-7508	G100	A6250-6300	G102

Squadron examples include: 7301 of No 27 Squadron which landed in German lines on July 9, 1916 when 2/Lt R. W. Nicholl was taken prisoner; 7481, the second of the eighty victims of von Richthofen on September 23, 1916; A1600 of 22 Reserve Squadron, Egypt, in September 1917; A3978 'B4' of No 27 Squadron shot down near Quesnoy on August 9, 1917; A6286, a presentation aircraft, marked RHODESIA III.

The BE 12s were converted to various standards for which no serial guide exists, but serial numbers are a guide to construction as follows:

1697	Bristol-built BE 2c modified to BE 12 prototype by Royal Aircraft Factory
6136-6185	The Standard Motor Company
6478-6677	The Daimler Company
A562-611	Coventry Ordnance Works
A4006-4055	The Daimler Company
A6301-6350	The Daimler Company
C3081-3280	The Daimler Company

Squadron examples include: 6172 delivered new from St Omer to No 19 Squadron, September 27, 1916; 6646 served in No 21 Squadron until 1.10 pm January 28, 1917, when shot down by anti-aircraft fire; A4007 served No 17 Squadron and A4008 in No 47 Squadron in Salonika.

The FE 2b and 2c

These two pusher aircraft types were introduced as fighters, but were used mainly as bombers and bomber reconnaissance aircraft. By their very configuration they were in a class apart for markings. Roundels were placed on the nacelle and were invariably small. Since there was insufficient fin area for the serial number to be displayed, these were in 8-inch high numbers across the fin stripes.

An important marking innovation with the FEs was night camouflage. While the experimental station at Orfordness conducted official experiments, some units evolved their own unofficial night camouflage. No 100 Squadron with FE 2bs, assigned to night bombing, painted one of their machines jet black and later others were similarly treated.

As a general rule FE 2as had 100 hp Green engines and were delivered in plain dope; only a few were built. The FE 2ds had 250 hp Rolls Royce engines with the serials 7995, A'1-40 A'1932-1966, A'5143-5152 all built by the Royal Aircraft



Top: One of the anomalies when camouflage was introduced in 1916—an uncamouflaged BE 12 with a camouflaged tail fin (Real Photographs Ltd). **Above:** No 10000, the only British military aircraft to have a five digit serial number. This BE 2c for the RNAS bears its maker's trademark—Blackburn (J. M. Bruce/G. S. Leslie collection).

Factory and marked as printed with the apostrophe in the serial, and A6351-6570 and B1851-1900 built by Boulton & Paul. The remainder (and bulk) of the FEs were FE 2bs with 120 hp or 160 hp Beardmore engines.

Squadron examples include: FE 2b 4917, which served in No 18 Squadron until August 5, 1916 when it was hit by anti-aircraft fire, then fired on by a Fokker monoplane and finally crashed on landing; FE 2b 5201, a presentation aircraft marked BOMBAY No 1, built by Boulton & Paul and first flown on October 2, 1915 with 120 hp Beardmore engine 277/WD1341 fitted; it was flown to France on October 10, 1915 and delivered to No 16 Squadron ten days later; FE 2b 6348 built by Royal Aircraft Factory and operated by No 23 Squadron until lost on June 26, 1916; FE 2b A822 which was painted black—it was set on fire by its No 100 Squadron crew who had started out to bomb Gontrode Zeppelin shed, but had been forced down on a ploughed field in enemy territory after the engine had been damaged by anti-aircraft fire; FE 2d A'5 which landed at Lille in German-held territory June 1, 1916 while on its delivery flight to France; FE 2d A39 which was the No 20 Squadron aircraft in which Sergeant T. Mottershead won his VC; D9117 which was built by G & J Weir and served in No 148 Squadron; and finally D9998 which was built by Ransome, Sims & Jeffries and served in No 102 Squadron.

First 'true' bomber

The Sopwith 1½ Strutter was the first of the true bombers. It was produced in two versions, a two-seat fighter with a capacity for dropping four light bombs, known as Admiralty Type 9400 and a single-seat bomber version known as Admiralty Type 9700; the type number was conditioned by the standard of the aircraft with these serial numbers.

While the initial deliveries to the Services were aircraft in plain doped finish in early 1916, all 1½ Strutter deliveries for June 1916 were camouflaged. Sopwith continued to keep the fins in a clear doped finish to permit the presentation of the firm's name and address, and the serial number was entered on a white box background that became a characteristic of Sop-

with-built aircraft. There was some transfers of RNAS aircraft to the RFC with consequent changes in serial number, eg, 9681 going to No 70 Squadron RFC as A891. A number of 1½ Strutters bore presentation details but these were appropriate to the 9400 fighter versions, not the bombers.

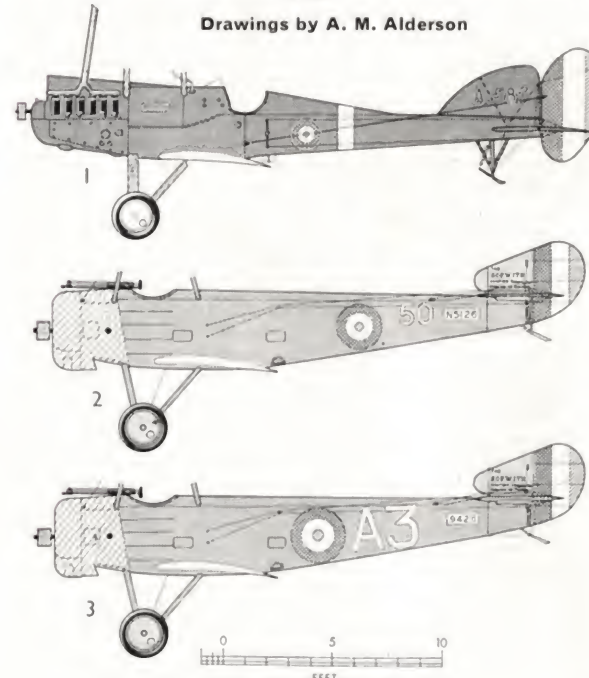
Squadron markings of 1½ Strutters were of two distinct types according to service in RFC or RNAS. Since most of those delivered to the RFC went to fighter squadrons, the survey is limited to those of Nos 3 and 5 Wings RNAS which used the 1½ Strutters as bombers and bomber escorts.

No 3 Wing based on Luxeuil, with a forward base for mounting operations at Ochey, in the Lorraine, was the world's first 'strategic air force' and conducted operations against German industry from late 1916 to early 1917. Rarely does documentary evidence exist of the change in camouflage or whether brown or green dope was used, but No 3 Wing is the exception. A note from Lt E. R. Peal the Wing's Engineering Officer to Wing Commander R. B. Davies at Ochey on November 25, 1916 runs: 'Submitted,

May I be advised how the fabric is lasting on the fuselages of machines which have been repaired and covered at the Depot, on which varnish has been used and not brown dope. Also whether you would prefer that machines taken into Depot for repair are left white or brown. A sufficiency of brown dope is at last to hand.'

Key to drawings: (1) A BE 12 of No 37 Training Depot Station, Yatesbury. From its name it is possible it was used by No 32 (Australian Flying Corps) Training Squadron at Yatesbury. (2) Sopwith 1½ Strutter (Type 9700) of No 3 Wing RNAS, as it appeared March 4, 1917 flown by Flight Sub-Lieutenant Masson during a raid on Brebach. (3) Sopwith 1½ Strutter of No 5 Wing which was interned after landing in neutral Holland on September 17th, 1916. It became LA38 (later S24) in the Dutch Army Air Arm.

Drawings by A. M. Alderson



RED	BLACK	NATURAL CANVAS
WHITE	DARK GREEN	NATURAL METAL
BLUE	DARK BROWN	VARNISHED WOOD

May, 1969



Anomalies in FE markings. **Top:** Standard factory finish of contract-built FE 2b. **Middle:** Royal Aircraft Factory built FE 2b A'9, with nacelle roundel deleted, rudder stripes marked obliquely and presentation detail Presented by Residents of the PUNJAB. **Bottom:** FE 2d A'6389 as built by Boulton & Paul. The apostrophe in the serial is just visible on the tails of the latter two machines.

From this it is evident that the depot in recovering airframes had been using clear dope with a protective varnish. Davies' reply has not been traced but he was evidently in favour of the camouflaged dope being used as photographs verify.

Some 1½ Strutters in this wing had individual motifs on the fuselage side in red, blue, yellow and white based on naval signal code flags, and in some cases these were repeated on the tailplane. All had individual Wing numbers painted on fuselage sides as shown in the table.

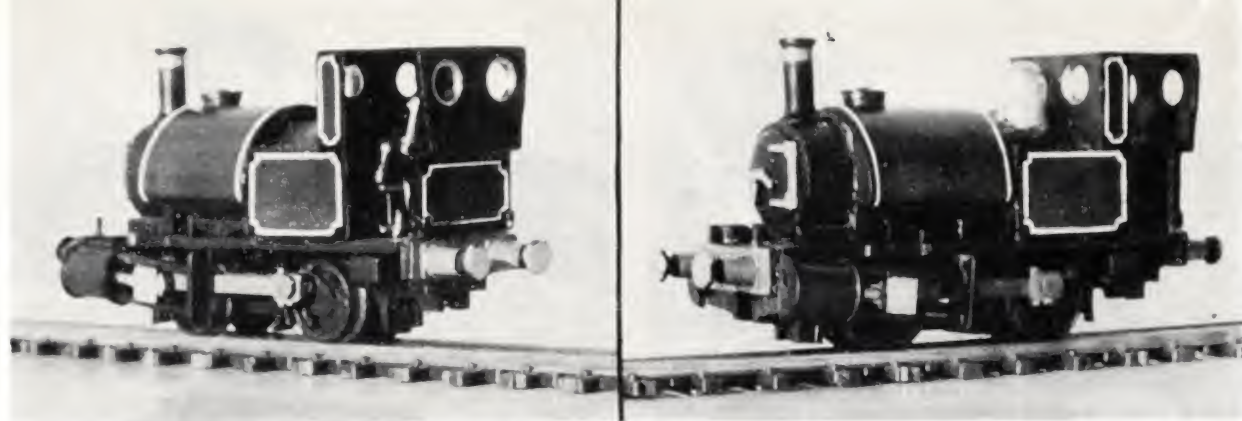
Both Nos 4 and 5 Wings operated Sopwith 1½ Strutter bombers from bases in the Dunkirk area. Examples of these operating with No 5 Wing are 9394, 9395, 9397, N5081 and N5114.

The following is a listing of Sopwith 1½ Strutters with No 3 Wing, Ochey January 1917 for strategic bombing operations.

Fuselage Number	Serial Number	Type No	Remarks
1	N5088	9700	Went to French Air Force
2	9706	9700	Collected from Luxeuil 16.12.16
3	9657	9700	Serviceable
4	9661	9700	Sent to Luxeuil for repair 17.1.17
5	9711	9700	Serviceable
6	9667	9400	Marked TIENTSIN BRITONS No 2*

*Presentation machines

Continued on page 411



Above: Two views of the completed model made from the Airfix 'Pug' kit. Ideal to go with any narrow gauge layout, this model is based closely on Talyllyn No 1 though departs from the prototype in using the 0-4-0 wheel arrangement of the Airfix kit.

Easy narrow gauge loco

CONVERSION FROM THE AIRFIX 'PUG' BY DAVID DAVIDSON

LAST year I spent part of my summer holiday in Merioneth, the home of the Talyllyn Railway. As a railway enthusiast, it was not very long before I was heading towards Wharf Station, Towyn, eager to board the first available train for the return trip to Abergynolwyn. As soon as I saw two of the tiny locos in the yard outside I was immediately captivated by their appearance. Attractively painted and lined out, brass and copperwork aglow, they looked more like models than the real thing. I decided at once that I must include a narrow gauge line in my 4 mm gauge layout using the Talyllyn Railway as the basis for rolling stock.

There was no trouble in obtaining drawings; an assortment of wagons, coaches, and locos in 7 mm scale are available at the Wharf Station Bookshop—at very low cost I may add, working out at a shilling or less per sheet. The first step was to decide on a method of construction for the locos. Kits (by Gem) are available for Talyllyn stock in 5.5 mm scale but not in 4 mm scale, and so on seeing that locos Nos 1, 2 and 4 were all saddletanks, my thoughts immediately turned to the Airfix 0-4-0 'Pug' saddle tank which I had made a few months previously.

Conversion of the main dimensions from the 7 mm scale plans to 4 mm scale quickly showed that the Airfix kit could serve as a starting point for all of the above. The height of the chimney, the distance from the footplate to the top of the saddle tank, the diameter of the saddle tank, and many other dimensions were just what I wanted. My first loco, based on Talyllyn No 1 is now complete and the result is quite gratifying. The photographs show the model before the addition of such details as lamps, handrails, etc. I will describe the method of construction in some detail, the general method being applicable to any loco of similar size. Unless otherwise stated all cutting of Airfix parts was done with a razor saw.

Figures 1 and 2 show drawings (actual size) of the model. Letters have been used to denote parts made from sprue or 20 thou plastic card (black for choice); the numbers are those used for parts in the saddle tank kit. The footplate (7) is first cut to size, working from a centre line as an aid to symmetry. Tool boxes, locating stubs for couplings and 4.5 mm strips from either side were carefully removed. All small projections were filed down flush with the underside. The footplate was then shortened to 58 mm by removing a strip at the rear only, taking care to keep corners square.

The mainframes (1, 1A) were next cut to the same length as the footplate, the cut at the front being made as near as possible to the cylinder block. The stretcher pins were reduced in size to give a separation of 3.5 mm and a longitudinal cut was also made in each frame just above the locating hole for the slide bars. After checking that all edges were square the mainframes were cemented centrally on to the footplate underside.

Wheels were next filed down to 10 mm tyre diameter, using a square needle file, and finally finished off by sanding, spinning the wheels on their axles fixed into a hand drill. Only then were the half-axles reduced in length to give a flange separation of 8 mm. The squared ends of the half-axles were simply pushed through the holes in the mainframes and cemented together. The remainder of the mainframe assembly was carried out exactly as described in the Airfix instruction sheet.

The two halves of the boiler (8, 8A) were now cemented together and when thoroughly dry, the chimney, filler cap and dome were removed with a new blade in the craft knife. Cuts were made at a slant, from each side, rather than going straight across. Front and rear sections of the boiler were then removed to give the shape shown in Fig 1. The front lug was retained with a small section of plastic above it to

rest the smokebox (A) on top. The tank is completed by cementing on semi-circles of plastic card front and rear. These should be cut slightly larger than required and filed or sanded down to contour. Any minor blemishes are filled with plastic putty. If you are going to weight the model with lead, it makes life easier if you pack the metal in before adding the second semi-circle.

The smokebox (A) was made from a plastic card strip of the correct width bent into a circle of 13 mm diameter with a 3 mm cemented overlap at the ends. A short period of pressure between 'long-nosed' pliers secures the joint. A disc of plastic was cemented on the front, and the smokebox door, cut and filed from part 9, was cemented centrally to the disc. The completed unit was then cemented into place on the boiler (8).

The rear of the boiler (B) was again made from a strip of plastic card bent into a circle of 12 mm diameter and cemented. Parts A and B could, of course, be made instead from a suitable length of plastic tubing, eg. from a doctor's disposable syringe. The front of the cab is produced from part 12 as follows. The firebox is sawn off and a centre section 6 mm wide is removed from the plating. The two halves are then cemented together, squared at the top, and the joint strengthened by cementing on the firebox, reduced in length by half as shown in Fig 1. The rear of the cab was similarly made from part 13. As well as removing a 5 mm central section, a horizontal cut was made just above the central row of rivets so that the characteristic 'step' could be produced by overlapping (see Fig 1). Some additional filing was also required to give the shape shown by the dotted lines in Fig 2.

Two L-shaped pieces (C) were next cut from plastic card and cemented to blocks of balsa wood 3 x 12 x 10 mm so that the sides would be held flush with the footplate edges. The top and front sides of the

wooden blocks were also covered with rectangles of plastic card. With parts 12, 13 and sides (C) fixed in place, all that remains to be done to the cab is to cement on the regulator handle and a plastic card rectangle (E) for the roof, rounding off the front and rear edges.

The Talyllyn No 1 chimney does not taper as does the Airfix part, so a little work with a file is required at the top to produce the desired effect. The chimney and filler cap are cemented in place as shown in Fig 1. The dome (D) was shaped up from a piece of sprue.

The front buffer beam (10) was next cut to size, a 10 mm section being removed from the centre. In order to provide a flat surface for cementing the buffer beam halves in place, a portion of each cylinder head (4, 4A) was filed down beforehand. The buffers (18) in the kit are a shade on the large side and these were reduced in size before cementing into place.

The model as illustrated has a very pleasing appearance and certainly retains the main features of the prototype. The absence of the third pair of wheels at the

rear does not detract too much from the general impression, especially as Talyllyn No 1 was originally designed as an 0-4-0 loco, the additional wheels being added on the recommendation of some government inspector way back in the nineteenth century. I must confess that the Airfix wheels on the model are not perfect for running on OO-9 Peco track. In the near future I intend to replace the disc wheels by spoked TT3 wheels of 9 mm diameter. The wheels on part of the axle, can be pushed into a piece of plastic tubing turning freely in the holes in the mainframe (1, 1A). From my own experience with this model, however, I certainly would not recommend reducing the size of the Airfix wheels as described above. I think they would be much better reserved for some other model.

Motorisation

So far I have not attempted any motorisation of the converted saddle tank, but I see no reason why in the early stage of construction the footplate should not be cut to fit around any of the proprietary

N gauge chassis eg. Arnold or Minitrix. In this case you have an 0-6-0, though the centre wheels can be omitted from the Arnold chassis if desired. An alternative plan which has been very effectively carried out by Mr Keith Bannister, is to propel the 'dumb' loco by means of a motorised van. According to my own 4 mm scale drawings, the Talyllyn refreshment van would be well suited for this approach, with the van constructed around the motor bogie produced by Wrenn for their N gauge models. I have not tried the Playcraft 0-4-0 chassis as a basis, but it seems practical if you thin down the lower sides of the saddle tanks, cut away the bottom edges, and extend them down to the footplate. Due to the short wheel-base of this chassis, you would have plenty of space for a trailing bogie.

Painting details for Talyllyn locomotives—basically GWR Green and black—are evident from this month's cover picture. I used Humbrol Railway Enamels with Black striping for the lining. As a 'freelance' locomotive, however, you could paint it to match the style of your own 'company'.

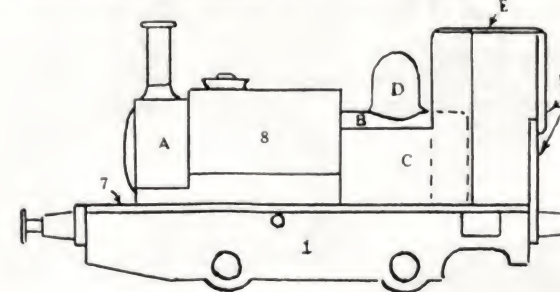


Fig. 1

Drawings full-size for model
All parts keyed to references in text

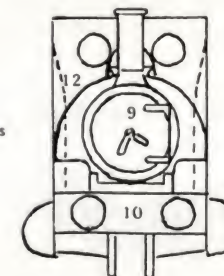


Fig. 2

Bombing Colours—from page 409

Fuselage Number	Serial Number	Type No.	Remarks
7	9669	9700	Participated in Brebach raid 4.3.17
8	9738	9700	Serviceable
10	9742	9700	Flown by Flt Cdr C. D. Draper
12	9744	9400	Marked BRITONS IN ITALY No 1*
19	9722	9400	Marked SAO PAULO BRITONS No 1*
20	9708	9400	Short range version of 9400
21	9733	9700	Believed lost in January 1917
23	9651	9700	First built to contract CP104237/16
24	N5091	9700	Handed over to French Air Force
25	N5089	9700	Serviceable
28	9735	9400	Serviceable
29	9730	9400	Force landed 3.12.16
30	9700	9700	Prototype of bomber series
32	N5098	9700	Handed over to French Air Force
34	N5104	9700	Handed over to French Air Force
35	N5106	9700	Serviceable
36	N5107	9700	Damaged January 1917
37	N5109	9700	Damaged January 1917
38	N5121	9700	Destroyed January 1917
39	N5122	9700	Handed over to French Air Force
41	9410	9400	Short-range version of 9400
43	N5116	9700	Handed over to French Air Force
44	N5115	9700	Handed over to French Air Force
46	N5171	9700	Flown by Wg Cdr Rathbone
48	N5123	9700	Handed over to French Air Force
49	N5128	9700	Handed over to French Air Force



FE7075 a late production FE 2b in black night camouflage without roundels and rudder stripes (Imperial War Museum).

Fuselage Number	Serial Number	Type No.	Remarks
50	N5126	9700	To French Air Force (airframe only)
51	N5173	9400	Short range version of 9400
53	N5174	9400	Replacement RIO DE JANEIRO BRITONS No 1*
54	N5124	9700	Serviceable

*Presentation machines

Bruce Robertson



An excellent view of a Light Tank Mk IV in 1940, showing details which can be incorporated in the model. Note the gas detector plate just visible at rear of turret, and the bracket for the smoke discharger (not itself fitted) on the turret side. Driver's hatch is open.

LIGHT TANK Mk IV

JAPANESE and German light tank conversions from the Airfix Carrier kit have been described previously and numerous readers have requested a similar conversion for a British light tank. Here then is the easiest of them all, the Light Tank Mk IV which makes an ideal model for a first attempt at a scratch-built superstructure if you've not previously tried anything of this sort. The Mk IV has the advantage of being constructed with flat faces only which greatly simplifies assembly. Though largely replaced by the Mk V and VI, Mk IVs were still in service in 1940-41 both in Britain and the Western Desert. In model form, using the Carrier as a basis, it is very slightly under scale width, but not noticeably so. Apart from the kit you require a little 10 thou and 20 thou plastic



Three stages in constructing the model. Left to right: Hull construction under way; basic hull and turret structure completed; model ready for painting. Rear axle and the starting handle are clearly seen in this view.

card, plus oddments of plastic.

Chassis: Take the upper half of the Carrier chassis—the part including the dustguards—and use a knife and file to trim off all raised detail, including the locating ridges. Then cement the upper and lower halves together and allow to dry. Now the chassis must be shortened slightly at the rear by cutting away the rear end diagonally from the top as indicated in diagram 2. This is best done with a razor saw. Note that the rear dustguards must remain intact—the cuts are made immediately inboard of them.

Suspension: The light tanks had front drive so the Carrier track/suspension mouldings are transposed and used back to front. But before this is done the twin and single bogies in each unit must be cut away from the mouldings taking great care not to damage the wheels themselves. The tracks—now only with the sprocket and idler intact—are bent gently in the fingers to take up the shape given in drawing 1. They may break in the process, but this does not matter—just cement any cracks together again. The severed bogies are next cemented back to the re-shaped tracks, twin bogie in front and rear bogie with its arm butting directly against the idler. Note that the long spring faces the front on each leading bogie. Drawing 1 together with the model pictures shows the arrangement. A further detail, which I did not include, is an arm to the rear sprocket, made from plastic card, to duplicate the arm on the leading bogie. In fact, its absence is hardly apparent if you choose to ignore it. When all is set, the suspension assemblies may be cemented to the chassis in the usual way, the locating pegs on the sprockets going in the appropriate hole. The idler locating pegs, however, should be sliced off as the idlers now protrude past the rear end of the modified chassis. A touch of cement on the inner edge of the track top will, however, compensate for their absence. It is important to get the suspension

correctly angled relative to the chassis, and in drawing 1 I have included datum lines for the dustguards and ground to act as a precise guide to this.

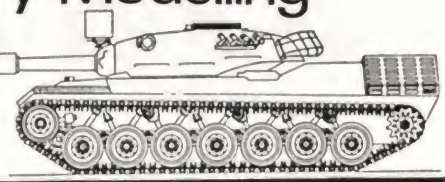
Hull: All the remainder of the work consists of plastic card construction face by face and edge to edge. Start by cutting out the hull sides from 20 thou card as given in drawing 3, ignoring for the time being the extension for the driving position. Cement the two sides in place immediately along the inner line of the dustguards and use pieces of scrap plastic on the inner edges to reinforce the join. Then cut a glacis plate and cement it at the front. Follow this with a 6 mm x 16 mm nose plate (with upper corners cut out to clear the dustguards). All other dimensions can be taken from drawings 3 and 4.

Next, in order comes the hull top, the sloping top section at the rear, and the hull rear. Pierce the hole (with dividers) for the turret pivot before the top is cemented in place. This completes the basic structure and the hull is completed by a side extension on each top edge, plus the driver's position which is added as a separate structure. You could, if you wished, arrange this with the visor plate open and

Military Modelling

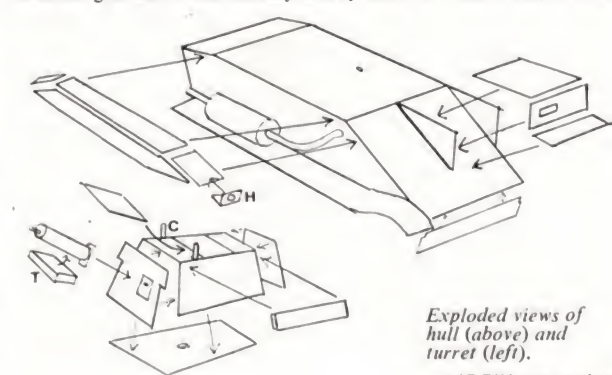
by

Chris Ellis



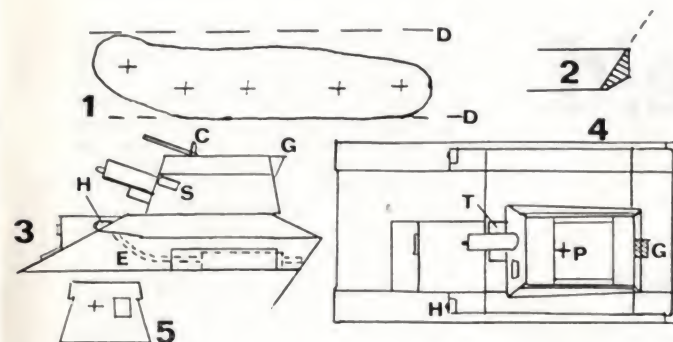
the section on the glacis plate folded forward as in the heading picture. The 'exploded' sketch shows the general assembly sequence for the hull.

Turret: The second 'exploded' drawing shows the turret assembly arrangement using plastic card again on the face by face principle. Measurements are, again, taken from drawings 3 and 4. The single hatch flap can be cemented either opened (as in the drawings) or closed. This is flanked by two handgrips for the commander, these being easily made from lengths of heat-stretched sprue. The machine gun armament can also be made from sprue, though I used a spare 1916 tank exhaust silencer suitably trimmed; this is perfect for the job if you have one spare from another conversion. Beneath the machine gun there was usually a tray fixed to collect empty shell



Exploded views of hull (above) and turret (left).

AIRFIX magazine



cases. This need not be fitted, but the ammunition case from the 6 pounder gun in the Carrier kit is ideal if you trim off the handle. It even has the correct X-shaped indentation in its lower face. Also optional is the smoke discharger on each side of the turret—made from heat-stretched sprue—and the gas detector plate, supported by two struts, on the turret rear. I omitted this on my model—not all vehicles had them.

Details: Final details include the various vision ports, all marked in the drawings, the exhaust pipe on the right (from heat-stretched sprue or suitable scrap parts), and a 3 mm wide stowage box on the left, shown in drawing 3. For the headlamps in armoured housings on the front ends of the side extensions I cut tiny triangles of plastic from sprues. There should be a long starting handle across the



Above: Two views of the completed model after painting. Driver is from the Airfix Bloodhound kit. Left: Full-size drawings for model. (1) New track outline. (2) Rear chassis modification. (3) Hull side. (4) Hull plan. (5) Turret front. (C) Commander's grip. (D) Datum lines for ground and track covers. (E) Exhaust—on right side—dotted. (G) Gas detector plate. (H) Headlight. (P) Pivot position for pin used to secure turret. (S) Smoke discharger. (T) Empty round tray. Note: Easy way of transferring outlines from plan to plastic card is to prick corners through page with plastic card underneath. Then join up pin holes with pencil and ruler to give cutting guide.

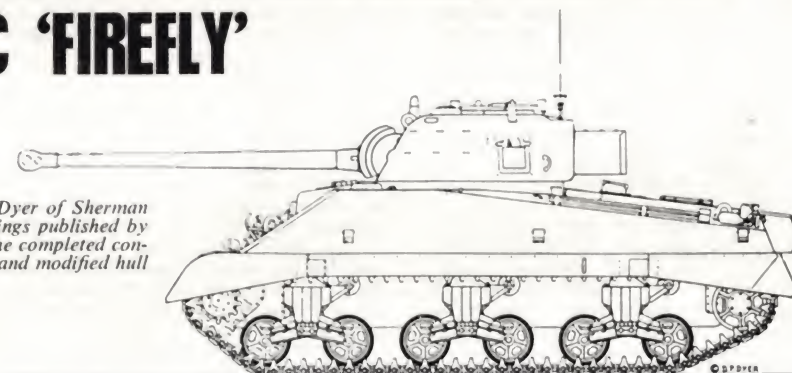
sloping rear section of the hull top, easily fashioned from a 20 mm length of wire. Lastly use a 17 mm length of heat-stretched sprue to depict the exposed rear axle from idler hub to idler hub. This was supported on small brackets from the hull rear which may be omitted in the model since they appeared, even in full size, simply as small collars gripping the axle just inboard of the idlers.

My model was finished as a typical 1st Armoured Division vehicle of 1940 using Almarks transfers from the T6 sheet.

SHERMAN Mk VC 'FIREFLY'

Conversion by J. Davies

Right: Side view, full-size for model, by D. P. Dyer of Sherman VC Firefly, reproduced from full five-view drawings published by Bellona (courtesy Bellona Ltd). Foot of page: The completed conversion from the Airfix kit, with lengthened hull and modified hull top.



SHERMANS with 17 pdr guns have been covered before in AIRFIX magazine with the exception of the most numerous variant, the Mk VC. The extension of the hull is not as difficult as it seems, and, by slightly altering the proportions of the model, gives it a surprisingly different appearance.

Cut the hull bottom and trackguards and lengthen them with 5 mm inserts of 40 thou plastic card. Remove the engine compartment



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from the upper hull, file down detail on the rear corners of the fighting compartment and assemble the chassis and front portion of the upper hull according to instructions. Driving sprockets, idlers, front and rear suspension units require no alteration, but the central unit must be moved to correct the spacing. Either the track must be lengthened by sections from another track or you can do as I did and leave a gap in the top run. This will be concealed when sand shields are fitted.

Complete new sides, cut from 10 thou plastic card and overlaying the existing half of the hull, give the neatest appearance. These include the sandshields separated by a scribed line, though you could cut these out separately. The new engine compartment comes in four pieces; two sloping panels for the sides cut from 10 thou sheet overlapping the fighting compartment at their front ends, a central panel scribed with panel detail and a bulkhead, of the same thickness.

The gun comes from the Panther. A new mantlet, a radio box on the turret and a loader's hatch complete the turret. The hull machine gun aperture should be blanked off and a stowage box added. Final details such as the travelling lock, flanges and brackets are largely a matter of individual choice and the colour scheme is that specified in the kit with new markings.

An essential reference for this model is the Bellona drawing, of which the side view is reproduced here. Previous articles in the magazine, including the May 1967 issue, give more details of making the mantlet.

The Lee-Enfield rifles

MODELLERS' GUIDE BY R. H. W. WRIGHT

Recent letters—and indeed articles—concerning the modifications to the rifle carried by the Airfix Coldstream Guardsman 1:12 scale figure when converted to soldiers of earlier periods, have caused some confusion and not a little interest among readers. This brief history of the Lee-Enfield development should enable modellers to choose the right version for any given period. The drawings are all to the same scale and by using the Airfix Guardsman's No 4 Mk I rifle and post-1945 bayonet as a basis, it should be possible to modify the kit rifle accordingly.

THE Martini rifle was about the first effective breech loading rifle of the modern era, but suffered from being only a single shot weapon of the 'Falling Breech' type, operated by a lever behind the trigger guard. With the modern requirement for rapid fire power it soon became obsolete, and about 1890, it was replaced by the first magazine rifle, the Lee-Metford.

The mechanism and general design of the Lee-Metford was so successful that the same basic design remained in use until 1957, being gradually modified as detailed below. Its drawbacks were that it had only a five round magazine and no bridge charger guide. This meant that the magazine had to be loaded by hand with five separate rounds, and this was corrected very shortly after when manufacture was taken over by the Royal Ordnance Factory at Enfield, when the rifle became the Lee-Enfield, in which the magazine was widened to take 10 rounds, and the bridge charger guide was added

so that the magazine could be quickly charged by chargers (or 'clips') of five rounds each, fed straight into the magazine by one press of the thumb. It also had a 'Cut Off'—a plate pivoted at the front, and pulled out by a knurled grip before charging. When the magazine was full, the cut off was pressed back, covering the top round so that it could not rise and be carried into the chamber by closing the bolt. Thus, once charged, the rifle could also be used with single rounds fed in by hand, saving the magazine full for emergencies. The rifle was something over four feet long, and had a 12 inch sword type bayonet of which the ring fitted over the barrel, and a slot in the pommel fitted on to a bayonet standard which protruded from the front end below the barrel.

This rifle was very good, but was rather long and unwieldy, so in 1909-1910 it was modified into the 'Short Magazine Lee-Enfield Mark I' which became the standard weapon of all three services up to 1942, with only minor modifications, although with the expansion of the army after 1914, the long Lee-Enfield remained in use by some Territorial and reserve units abroad until 1915-16 and for the duration of the war at home for training.

The SMLE Mk I differed from the previous model in having some 4 inches cut off the barrel, the end of which was then flush with the new fore-end, a one-piece forging which also comprised the foresight protectors. This carried, below the barrel, a round boss on to which the ring of the bayonet fitted, the bayonet standard being moved to a vertical posi-

tion under the fore-end. This meant that when firing with bayonet fixed, the path and trajectory of the bullet were altered less than with the bayonet fitted actually on to the barrel itself. To compensate for the shorter and handier rifle, the bayonet was lengthened to a 15 inch blade. This rifle continued through Marks 1, 2 and 3 with only very minor modifications up to 'Mark 3 Star', on which the Cut Off was removed and on which the old 'Long Range Sights' were discontinued.

These sights had consisted of an arm pivoted to the left rear of the breech which could be raised vertically to provide an aperture back sight about 2 inches above the level of the bolt; half way along the left side of the fore stock was a pivoted arm, one end of which was about 2 inches long and carried a bead foresight, the other end being a pointer to register on a range scale engraved on a metal disc countersunk in the stock and giving ranges well above those on the normal 'U' backsight. This, of course, was not meant to be used for effective fire at individual targets at such ranges (over 2,000 yards), but was used with fire of a whole platoon or company into an area, to provide a 'beaten zone' of fire, a task more properly taken over by light and medium machine guns as they were introduced. The whole barrel was covered by additional stocking of wood along the top.

This rifle was undoubtedly the finest service type ever made. It was rugged, well made and stood up well to dirt and wet. It was precision built, and such parts as magazines, bolts and even bayonets were individually fitted to their own rifle, were not interchangeable and carried the same serial number, as their own rifle. It was provided with three lengths of butt which could be interchanged by unit armourers to suit the height and length of arm of the individual soldier.

However, it was this high quality which led to its downfall, for it was unsuitable for mass production, so, trying to profit from experience of 1914-18, the War Office, around 1937, approved and 'sealed' the pattern of a modified rifle, the Mark 4 (later classified as 'Rifle No 4 Mk 1'), which again had the same basic

design, but was to be made to mass-production standards with interchangeable parts. In addition, the barrel was heavier and the wooden stocking was shortened, so that the muzzle once more protruded in front. The sword bayonet was dropped and replaced by a round 9 inch bayonet like a knitting needle on a socket which clipped on to and round the barrel itself.

The No 4 had an aperture backsight at first having only two ranges—400 and 200 yards, but this was later replaced by a properly graduated backsight. The idea was good, but when it went into production in 1940-41 the results were to a good rifleman disappointing to say the least. I thought it was a 'stinker'. It always felt wrong: the balance was wrong due to the heavier barrel which was supposed to give greater accuracy—but didn't—and due to low standards of fitting and finish,

the bolt action was poor, jammed easily, and caused either double feed of cartridges or no feed at all!

This rifle was also produced as the 'Rifle .303 inch No 5'—a carbine type in which the barrel was shortened and the fore stock removed as a lighter, handier weapon for jungle fighting.

The good old Lee-Enfield was finally replaced in 1956-57 with the introduction under NATO pressure of the standard SLR (Self-loading Rifle), another mass-produced, and to my mind for many good reasons, a very unsatisfactory weapon.

In parallel with development of the Lee-Enfield types was another pattern. With the huge number of rifles required for mobilisation in 1914, and the consequent shortage of SMLEs, the War Office approved a design suitable for quantity

(if not mass) production, and contracts were placed in USA for production of this rifle by Winchester, Springfield, etc. It was known as the 'Rifle No 3 Mk 1' or 'Model P (Pattern) '14'. It was in appearance more like the old Lee-Metford, had only a five round magazine, and a rather complicated mechanical arrangement of the bolt. In action it was found to be easily jammed by wet and mud and was never used extensively, being relegated to training, home defence and garrison units. When America entered the war in 1917 and also required large numbers of rifles, this model was adapted to their use by modification of the chamber and barrel to take the US .300 inch rimless cartridge, and production and contracts were turned over to the US Army as the 'P '17'—large numbers of which were sent to Britain in 1941-42 for arming the Home Guard.

New Books — from page 393

Dutch aircraft and Dutch aviation but this is to the good.

Excellent pictorial coverage is given to operations by Ju 52s during the invasion of the Low Countries and there is a good section of 'one off' Dakota variants giving an excellent selection of military and civil markings. Aircraft of Russian origin in East German and Czech markings are illustrated, including one fantastic picture of an Indonesian Mig-19 crashing during an air show.

Both English and Dutch captions are given, which is helpful to English eyes, and in all this book, which could so easily have been just another 'pot boiler', makes a useful addition to the enthusiast's library.

Early guns

FIREARMS IN ENGLAND IN THE FOURTEENTH CENTURY, by T. F. Tout. Published by Arms & Armour Press, 677 Finchley Road, London NW2. Price 30s.

THIS is a highly specialised book of interest to firearms enthusiasts and also, perhaps, wargamers specialising in the period covered. It is basically a reprint of a learned work which first appeared in 1911, claimed, in fact, to be the only really authoritative publication available on the subject. Added to this edition are nine pictures of guns of the period and a new introduction. Though the book is quite slim, it covers a great deal of interesting ground, most of which will be new, we imagine, to anyone wishing to extend his knowledge of the history of firearms.

Civil markings

CIVIL AIRCRAFT MARKINGS, by John W. R. Taylor. Published by Ian Allan Ltd, Shepperton, Middx. Price 3s 6d.

THE 19th edition of John Taylor's ever useful annual of civil aircraft registrations is with us once again. This book is without doubt the aircraft enthusiast's regular buy each year. It contains much information which cannot be obtained in such concise form elsewhere and the usual crop of photographs is again well selected and representative of all types on the British civil register. For less than the price of a packet of cigarettes John Taylor gives a reference book of great value and interest.

Latest from Aircom

NORTH AMERICAN MUSTANG: in RAF, RAAF, SAAF, RNZAF, RCAF and foreign service, by Christopher Shores, illustrated and compiled by Richard Ward. No 3 in the Aircom Aviation series. Published by Osprey Publications Ltd., PO Box 25, Reading, Berks. Price 21s.

THIS book is a companion to the first in the present Aircom series on the Mustang, but this time aircraft of the type in service with air forces other than the USAAF or USAF are illustrated.

Apart from a large number of extremely interesting photographs there are 48 side views of the Mustang in full colour, black and white plan views and a short but interesting text giving units and theatres of operation of the type under review.

Aircam are doing their best to provide value for money and they seem to be relying on the modeller as their main source of income. Enthusiasts for the Mustang, either as a research subject or model subject, will certainly be satisfied with what they find here.

SUPERMARINE SPITFIRE Mk. I-XVI and BATTLE OF BRITAIN. Aircam Series. Published by Osprey Publications Ltd, PO Box 25, Reading Berks. Price 21s each.

TWO more volumes in this popular series. The first is devoted to the Merlin-engined Spitfire and the second to the Hurricane, Spitfire and Bf 109 in the Battle of Britain. Both books are very well illustrated with very little text but a great many illustrations all of interesting variants of the aircraft described. Colour and line side view illustrations are given in plenty and the model maker will delight in some of the rare colour schemes that have come to light in this previously unpublished material.

The Battle of Britain book has no pictures, just colour scheme drawings and camouflage details. Additional items of interest are a series of full colour illustrations of unit emblems of both Luftwaffe and British squadrons. In the Spitfire book there is a supplement listing all the units which used the aircraft and their fuselage codes.

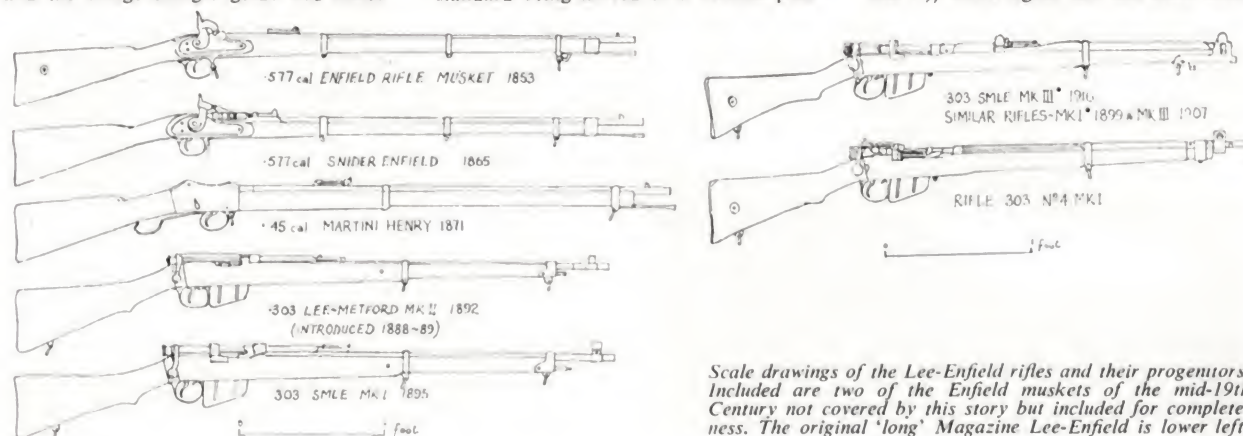
Both books offer plenty for the modeller.

Tank Profiles

AFV 1: CHURCHILL INFANTRY TANK, by B. T. White. AFV 2: PANZERKAMPFWAGEN III, by W. Spielberger. Published by Profile Publications Ltd, PO Box 26, Great Bookham, Leatherhead, Surrey. Price 5s each.

GOOD news for military enthusiasts is that the old Profiles series has been resumed in a much modified form with a planned programme of monthly releases each to be devoted to a particular tank. None will repeat earlier titles. First out deals with the Churchill tank in the well-remembered Profiles style, nicely produced, well-written, and well illustrated. Compared to the old Profiles, this new 'AFV' series uses a larger page size, more pages, more pictures, and is half as long again. The only unfortunate thing about AFV No 1 is the colour spread which is inaccurate in several respects, mainly in showing a Mk VII turret on a Mk III Churchill. We hope the publishers might remedy this later. Curiously also, the Churchill is described in the title as a BIT—short for British Infantry Tank but a meaningless abbreviation in AFV parlance.

The second title is very much better in presentation, the colour drawings in particular being accurate and very well done. Two vehicles are shown in colour, a PzKw Ausf J and a command vehicle being featured. There are numerous rare pictures and a straightforward coverage of the PzKw III story, mainly concentrating on basic variants.



Scale drawings of the Lee-Enfield rifles and their progenitors. Included are two of the Enfield muskets of the mid-19th Century not covered by this story but included for completeness. The original 'long' Magazine Lee-Enfield is lower left.

AIRFIX magazine

NEW KITS AND MODELS

TAMIYA PORSCHE 910

THE year before last the German Porsche concern dominated the smaller-capacity sports and prototype racing car classes with their 910 model, and one of these extremely expensive cars was exported to Japan to be driven by the local heroes, Shintaro Taki and Tetsu Ikusawa—both of them fine drivers. Tamiya have prepared their latest 1:12 scale masterpiece from the Taki Racing Team's machine, and what more can be said about it other than that it's up to their usual standard.

If you want some more said about it, well, it's got working wheel steering with a genuine miniature rack and pinion and rubber bellows on the linkage, working coil spring suspension fore and aft, has a gearbox included and can be easily motorised, features working tail lights—but no headlights which is a little odd—and is also utterly, completely and beautifully detailed.

Soft rubber air-filled 'Dunlop' racing tyres are included, with miniature tread patterns so accurate that when we showed them to Dunlop's Racing Tyre Designer he was amazed at the Japanese company's skill. Other features include a full wiring and piping loom on the super-detailed flat-six engine, wire mesh stone guards over the injection intake trumpets, a removable roof panel in prototype style (the cars had so little headroom that for a tall driver the panel could be removed), beautifully-formed window transparencies, racing jacks for display purposes and a full and excellently-produced set of decals.

True to form some of the Tamiya kit parts do not quite fit first time round, as on the Otaki Honda S800 kit reviewed last month, but this tends to give such an otherwise faultless kit character, which was something the Otaki one lacked. To build the Porsche is more of a modelling job than straightforward assembly of somebody else's handiwork. BMW Models of 329 Haydens Road, London, SW19, supplied our sample. Price is £6 6s and it's worth every yen of it! D.C.N.

NEW ALMARKS

TWO new military transfer releases from Almarks will be 'musts' for tank modellers. To the usual OO/HO size and suitable for Airfix or Miniatanks military models, the first sheet, T15 consists of 'arm of service' signs for the British RASC, RA, RAOC, REME, and Royal Signals. With the exception of the RASC, these all come in strips so that they can be trimmed off to the required width by the modeller. Guide marks for average widths

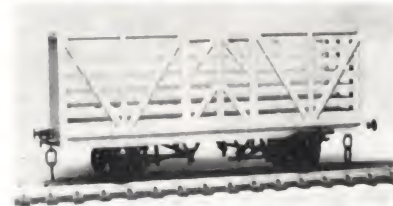
which is through a chain of gears to all six are given on the sheet. There are separate serial numbers in white for application over the signs. Bridging circles complete this most useful sheet. Our recent articles on British military markings (last month and November 1968) will aid anyone needing to know details for application. Second military sheet, T14, features a mass of Soviet tank markings, stars in various sizes and styles, cyrillic numbers in yellow and white, and unit 'diamond' marks, all most useful. The only omission seems to be the Guards emblem, which would have been nice to have. Each sheet costs 3s 6d.

Finally, sheet A16, for aircraft modelers contains underlying Luftwaffe crosses in three styles and four sizes, all to 1:72 scale. Very handy to have—it would be useful also as a source of German crosses for 1:35 and 1:21 scale tank models. Price of the sheet is 3s. C.O.E.

RATIO WAGON KITS

RATIO are producing a new range of plastic wagon kits and we have received samples of the first two from Jones Bros of Chiswick. They are for a NE (ex-NBR) Empty Cask Wagon and a GWR Open 'C' Tube Wagon. The quality, finish and detail of the plastic is very high and the parts fit together extremely well. The open slatted sides of the cask wagon are a perfect example of a model which would be difficult to scratch build, and the plastic parts are cleanly moulded with next to no flash.

We were not terribly convinced about the plastic bushes for the axle guards so we made a second model of the Tube Wagon drilling out the axleguards to take Peco brass bearings. We feel bound to say that we find this second model runs better. Both kits very generously supply two sets of axleguards but nothing is said about which ones should be used. Only the cask wagon supplies couplings of the A2Z (ie, Airfix) variety. One thing that needs to be watched particularly with the GWR open tube wagon is to make sure the axleguards are not forced too far upwards



The new Ratio NBR Cask Wagon now available in kit form and reviewed above.

during assembly. It is recommended that some packing pieces are inserted between the springs and the solebar as otherwise the buffer height can finish up being too low. Pressing the body ends upwards during assembly also helps.

The empty cask wagon kit costs 13s 8d and the open tube wagon 9s 11d which is not unreasonable considering the high production costs for such interesting and high quality models as these. Additions to the range are expected and we look forward to seeing them. N.S.

FIAT BY TAMIYA

LATEST release in the splendid Tamiya 1:100 scale aircraft range is a superb kit of the Fiat G91R which can be assembled in either the reconnaissance or ground attack form. Alternative noses are provided for this, as are alternative external loads. Assembly is very simple and the only part of our sample which didn't click straight into place was the nose which needed a little filing to get a snug fit. Otherwise the kit is virtually faultless, the fidelity of the mouldings being remarkable for such a tiny model. Flash was minimal, just a little on the very fragile undercarriage legs. There is an excellent transfer sheet, offering markings for the Italian Air Force aerobatic team, two other Italian Fiats, or a Greek machine. Lastly there is a first-class instruction sheet, complete with colour scheme drawings. Even if you don't normally collect 1:100 scale models, this charming little kit is worth making as a desk or shelf ornament; it will probably 'hook' you on 1:100 scale in the process! Price of this kit is 5s 11d, and it's available from Jones Bros of Chiswick. C.O.E.

NEW IN NARROW GAUGE

FROM BMW Models of Wimbledon we have received samples of the superb range of HO—9 narrow gauge rolling stock manufactured by Lilliput of Austria. The locomotive is a beautiful model of No U11 one of the 0-6-2 tanks on the 760 mm gauge Styrian Government Railway. Ian Allan's *Round the World on the Narrow Gauge* shows a fine photograph of this actual engine on page 19. The finish and detail of the body, particularly the neat red lining is excellent. Unscrewing the spark arresting type chimney releases the body from the chassis to show the cast metal mainframe, three-pole motor and substantial ballast weight over the coupled wheels. The standard of workmanship is very high particularly the drive mechanism

Continued on page 418

AIRFIX magazine

MODELTOYS

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Curtiss F11C-2 biplane	1/72	11/3
P-51B Mustang	1/72	11/3
F8F Bearcat	1/72	11/3
F7F-3 Tigercat	1/72	15/6
M.E.B. 10E	1/72	15/6
D.A.I.E. Skyraider	1/72	15/6
G.H.U.-16B Albatross	1/72	23/9
B-52D Stratofortress	1/72	23/9
P-51B Mustang	1/48	15/6
P-47D Thunderbolt	1/48	23/9
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A. Shackleton MR.3	1/72	19/11
H8K2 Emily Flying Boat	1/72	32/6

AIRFIX

This fine range of kits always in stock, with new releases as available. Recent releases:

C. Helldiver	1/72	3/9
PE-2	1/72	3/9
Grumman Duck	1/72	3/9
D. Skyraider A1J	1/72	3/9
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H.P. O/400	1/72	10/6
Ancient Britons	OO/HO	2/9

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SHEET No. 1

R.A.F. BAC LIGHTNINGS 1/72 scale



Extensive and thorough research and preparation, combined with absolute top quality materials, printing, and accurate colour reproduction, has resulted in what must be the last word in decals for the BAC Lightning in R.A.F. service. Finely detailed markings include emblems, serial numbering, squadron coloured panels, individual A/C letters etc. (Roundels, except fuselage for 92 SQN. machine, standard fin flashes, and ejection seat markings—use from kit decal sheet). PRICE 7/6 (UK postage 6d)

Also contains fully illustrated instruction sheet, with thirteen application detail illustrations, and colour finish information for all machines covered.

Note: By rearranging digits given in serial numbering, it is possible to cover many more machines, also that digits 0-9 are all included and can be usefully used on kits of other R.A.F. aircraft. Packaged in protection giving plastic envelope.

Sheet No. 2 in this series will feature the N.A.F.—100D Super Sabre in U.S.A.F. markings. Details will be given later.

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Also revised fin emblem for Airfix kit of F.Mk1A. XM192 "K" 111 SQN.

*Use Airfix kit, price 3/9

†Use Frog/AMT/Hasegawa kit, price Frog: 7/6

Extensive stocks held on both above kits, postage as shown in previous column.

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New Kits—continued

coupled wheels, all of which are flanged. Coupling and connecting rods are fitted and even the valve gear reciprocates realistically on the move. Performance is quiet and reliable, responding to the controller without hesitation at all times. It really is a dream of a model.

The coaches are finished in a medium green with natural wood colour window frames, white lettering and grey roof and underframe. The clarity of the plastic moulding and the detail is superb. Their long rigid wheelbase does not suit them for the extremely sharp 5½ inch radius Playcraft curves. They will take a single curve reasonably well but reverse curves, especially through pointwork, causes some anxiety. We imagine the larger radius Peco points would be more suitable.

We can't help feeling that the high standard of these models will attract many people to HO—9 narrow gauge railway modelling. The locomotive costs £5 12s 6d and the coaches; 1st/2nd composite, all 2nd and the luggage van cost 15s 9d each. These are very reasonable prices considering their very high quality. N.S.

WAGON SHEETS

WE have received two more new sheets of OO scale printed wagon parts from Collet Models, 135 Winter Road, Southsea. Sheet 3 contains parts for two 5-plank wagons; 'New Rock Colliery' and 'Wincanton Coal Gas' and one 7-plank 'Whitwill Cole & Co' of Bristol. Sheet 4 contains one 7-plank 'Dutton Massey & Co' of Liverpool and one 5-plank 'Wadsworths' of Barnsley. Also on this sheet are some GWR brake van nameboards. These sheets are fully up to the standard of the first two in the range which were fully described in the July 1968 issue. Sheets 1, 2 and 3 retail at 4s each and Sheet 4 at 2s 6d. Postage 6d extra. These can all be used to make your own wagons on the Airfix mineral wagon chassis, or similar chassis. Full details for this were given in the special article on the subject in our July 1968 issue. N.S.

REVELL SHIP

IN their newly-released kit of the famous American whaling ship *Charles W. Morgan*, Revell have maintained their traditional high standards. The completed model is colourful and effective and the parts fit together well, while the instructions are clear and full. The rigging suggested in the instruction sheet is quite effective when done in the two colours of thread provided with the kit, although it is necessarily rather primitive (though much less so than is that suggested by many other makers!)

We particularly liked two points about this rig. One is the first commercial use we have seen of a method of fixing deadeyes which has been used for some years by experienced ship modellers, where the shrouds are led down through drilled holes in the channels and tied off to the

The Revell Charles W. Morgan model.

chains; the deadeyes (separate, and with notches on their rear surfaces) are then cemented to the shroud and to the channel. The other excellent point is the provision of over 50 belaying pins moulded into the pin-rails and life-rails of the kit, and the reference in the instruction sheet to that classic work *Masting and Rigging* by Harold Underhill for those who want to work out the leads of sheets, tacks, bunt and leech lines and install them.

In short we thought this a first-class kit for a beginner as well as a good exercise for the more serious modeller. Price of this highly commended kit is 17s 11d. N.C.L.H.

VETERAN CARS

BMW Models also supplied us with samples of a Daimler and De Dion, produced by a Japanese manufacturer who prefers to remain anonymous, his name only appearing in Nipponese script (but Imai, we believe). The basic idea is good; 1:16 scale models of these motoring pioneers could be really excellent miniatures of great detail and charm. However, these kits, which have about 40 parts apiece, have been well-moulded in ghastly and garish colours, while many parts such as gear wheels, road wheels and even seat backs have been anodised gold. Fit of the parts is fair but the instructions are not clear—as with the Tamiya Porsche they are all in Japanese script but at least the Tamiya's drawings and photographs were clear enough to be easily followed—and there is no true location for some items. Best part of these two kits, in short, is the excellent transparent display case provided with each of them, but as for the car miniatures themselves . . . ugh! They certainly need a lot of working over to reach showpiece standard. Price is 55s (Daimler) and 49s 11d (De Dion), excessive when compared with the far superior quality and finish of the Tamiya and Otaki large scale car kits. D.C.N.

HONDA FROM REVELL

ANOTHER newcomer from Revell is a 1:8 scale 'dragster' version of the Honda motor cycle which they already produce in kit form. This is based very closely on the existing kit, in fact, and the wheels and many other components are identical. However, the frame has been given 'customised' treatment in typical American fashion so that the whole assembly has been curved and elongated to a ground-hugging configuration. Whether or not there is a prototype for this or whether it is a Revell-only creation, the instruction sheet does not make clear. It

certainly doesn't look very roadworthy, however, in this new form. If you collect American 'customised' car models, this Honda Drag kit will appeal to you. Otherwise we would have thought it to have only limited interest to British modellers. Be that as it may, the kit is up to the usual high quality of the average Revell offering, with nicely plated parts and realistic 'rubber' tyres, plus a wealth of fine detail. Price is 35s 11d. C.O.E.

SKYHAWK FROM JAPAN

A 1:50 SCALE model of the Douglas A-4E Skyhawk has recently been issued by Fujimi in Japan and can be obtained from Jones Bros of Chiswick, who sent our review sample. The price of the kit is reasonable at 17s 6d, considering the amount of detail one gets.

Although there are no moving parts to the kit, its 68 parts fit well together and, as would be expected in this scale, are well detailed. Cockpit interior has an accurate representation of the real thing and although the canopy is moulded in one piece, it would be a simple matter for the average modeller to cut this and fix it in the open position.

An above-average transfer sheet is included which has markings for aircraft from either VA-155 of USS *Coral Sea*, a squadron from *Hancock* or *Enterprise*, or Marine squadron VMA-211. The instruction sheet is adequate and although printed in Japanese, English notes are added. A.W.H.

NEW PRINTS

PRINTS of transport subjects for framing and/or wall-mounting are becoming increasingly popular, and additionally they often provide useful references as colour guides for modellers. From Paul Hamlyn Ltd we've received samples of several new releases in the Hugh Evelyn series which are now being distributed within the big Paul Hamlyn 'Prints for Pleasure' range. Priced at 8s each, the prints we received portrayed a 1919 Leyland RAF-type motor van, an 1898 Daimler motor truck and an 1868 horse-drawn light van. All are in full colour, depict side elevations, and measure 13½ inches by 18½ inches. The Leyland van is the well-known preserved vehicle of its type formerly used by Chivers the jam makers, and is portrayed in their very attractive livery. The Daimler drawn is that preserved in the Daimler-Benz Museum, Stuttgart, while the horse-drawn delivery van depicts that still used by Rothmans the cigarette makers. There are seven other 'vintage commercial' prints in this range including the actual Dennis fire engine modelled by Airfix in 1:32 scale, so this particular print is specially useful as a precise painting guide. Others include a Ford Model T van, a 1908 Unic taxi, and a horse-drawn Shand-Mason fire engine of 1902.

In our July, 1968, issue we reviewed a large batch of prints published by Prescott-Pickup Ltd, and we've now had

Continued on page 422

AIRFIX magazine

Letters to the Editor

1:48 wanted

MAY 1, as a humble 1:48 scale modeller, and on behalf of all the other people who like to work in this scale, appeal through the medium of your Letter Page, to some kind and sympathetic manufacturer who may read this letter, to spare a thought for those who like to build aircraft models in this scale.

I feel, like others do no doubt, when they stand looking at their small selection of second world war British aircraft offered in this scale, the pangs of emptiness for just a few more to fill those gaps.

I know that one American manufacturer has whetted our appetite with a Mosquito, Spitfire and Hurricane. We can also boast a very good looking Lysander also from America and, last but not least, the nostalgic Inter-war Years' four from Impact. A very noble selection you might comment. How nice it would be to see, amongst those mentioned, either a long or short-nosed Blenheim; perhaps a Beaufighter or even a dear old 'Wimpy'. To mention anything larger in this scale would be out of the question, I know. The Revell B 25 is a classic example of what can be done in 1:48 scale.

Still whatever was offered to us would be welcome be it ever so humble. We already have a good selection of American planes that will keep me busy for many a month to come, but being a sentimental Englishman, I would like to see a few more memories of the fading past in my collection. I hope someone will hear the cry from the Wilderness and not let it go unheeded.

Quite often letters are published regarding the method of obtaining a realistic leather finish for upholstery. I still think the mixing of gloss to matt in proportion gives a good effect. I once had the pleasure of meeting someone whose model cars were superb and he used this method on all upholstery. I have used this way ever since. A dull sheen can be added to prop blades using a matt and gloss black and a touch of white gives a pleasing rubber effect to tyres. A little experimenting is time well spent.

W. I. Jones, Blackpool, Lancs.

Buffalo squadrons

I FEEL that I may be able to fill a few gaps with regards to the Buffalo squadrons, namely No 21 and 453 Sqns, RAAF, mentioned in Mr Bowyer's article of November 1968. No 21 Sqn RAAF did use the code 'GA' while serving in Malaya, and it is true that this code was later allotted to No 75 Sqn RAAF.

No 453 Sqn's code was 'TD' and I hereby list the serials of Buffalos used by this Sqn for those who may be interested, they are: W8188, W8158, W8216, W8160, W8211, W8202, W8180, W8156, W8206, W8197, W8237, W8208, W8226, W8159, W8152, W8157, W8231, W8310, W8225, W8151, W8192, W8217, W8216, AN185, AN213, AN180, AN175, AN210, AN189. Two Imperial War Museum photos, negative numbers CF753 and CF755 show a line up of No 453 Sqn Buffalos in Malaya. Two aircraft at the head of the line are—TD-V, AN185 and TD-J, AN210.

May, 1969

Letters to the Editor selected for publication entitle the senders to each receive a free Airfix plastic construction kit of their choice. We are always pleased to receive your comments and pictures, which will be considered for publication. Submitted material and pictures can only be returned if accompanied by a stamped addressed envelope, and the Editor cannot accept responsibility for safe keeping of any such contributions, neither does he necessarily agree with comments expressed by correspondents in the letters columns. Please note that any letters anticipating a reply MUST be accompanied by a SAE or stamp.

It will be noticed in the above list of serials for No 453 Sqn that AN180 was carried by an aircraft of No 21 Sqn, this being GA-B. How this serial comes to be listed under 453 Sqn is that on Christmas Eve 1941 an order was issued from Air Headquarters that Nos 21 and 453 Sqns should be temporarily merged, though each would retain its identity. The unit became known as 21/453 Sqn.

There still remains the question as to what Sqn carried the code 'WP', as per the photo on page 117 of the November issue. This could well be also No 453 Sqn RAAF as it was not too unusual for the codes to be changed. In the print I have of this photo, the Buffalo in the foreground bearing no codes appears to have the serial W8158 displayed on it; this would then make it to be from No 453 Sqn RAAF.

With regards to the photo of Hudson A16-57 on photo page in the January 1969 issue, Mr Thompson who supplied this photo states it to be an aircraft from No 13 Sqn RAAF at Darwin 1940. I also have a photo of this same plane bearing the code of No 6 Sqn RAAF and is also dated as the 1940 period at Darwin.

Frank F. Smith, Melbourne, Australia.

RAuxAF Gladiators

LESLIE Hunt's article on the Royal Auxiliary Air Force in your March issue has at last filled a long-standing gap in recently published Air Force history.

The references to 615 Squadron are especially interesting, though I believe they were actually formed at Kenley. I remember their Gladiators at Croydon in 1939; they flew in on a magnificent golden morning which made the whole idea of war seem ridiculous. The colours were of course Dark Earth and Dark Green with black port and white starboard underparts divided down the fuselage centre line and type A(2) roundels under the wings.

The fuselage roundels were like those above the wings, Type B until October when they were changed to type A(2). Most conspicuous feature was the outer face of the wheels which were finished in Vermilion, Cadmium Yellow or Ultramarine according to the Flight. The inner wheel faces were still silver.

After the arrival of 615 at Merville, for which they left Croydon on Wednesday November 15, the two darker Flight shades were outlined as can be seen in the lower photograph on Page 305, where

also it may be noticed that the fuselage roundel has received a narrow yellow outline on machine 'R', that was not carried in England. Spacing and letter form indicate that it is almost certainly the same aircraft that I knew.

The code letters were quite dark, almost Dark Sea Grey and were aft of the roundel on the Starboard side. Machines 'O' and 'R', like 'T' and 'M' are known to have had Scheme A camouflage finish. Many of the 615 Gladiators were formerly with 605, which had flown them down from Drem on September 7, 1939.

Another RAuxAF Squadron at Croydon during November was No 607 which had its Gladiators finished exactly the same as those shown in Mr Hunt's article; unfortunately, though, my notes make no mention of the wheel discs for this Squadron.

One odd feature was the complete absence of individual letter at the time of their departure for France, just the darkish grey 'AF' forward of the port roundel and aft of the starboard. On a few the spacing between the roundel and letters was quite large, as much as a foot, although the pair were normally spaced in relation to each other.

Peter G. Cooksley, Wallington, Surrey.

Vinyl roof

AS a keen plastic car modeller, I have devised a good way of simulating the black vinyl roof covering which seems to be the current vogue on sporting cars.

First of all measure a quarter of the roof from each side and score two lines on the roof from front to back, taken from these measurements. This is to simulate the seams on a vinyl roof.

Next, mask off all the rest of the car, and take good care to cover all surfaces. The reason for this will be self explanatory as I go on.

Now comes the most difficult part. Spray the roof from a distance very thinly with a cellulose car spray. As this hits the roof, it will slightly craze the plastic in the form of pimpling it. Now, be patient. Allow to dry thoroughly, preferably for a couple of days to let the plastic set hard again.

Paint in matt black and when this is dry rub with a little Vaseline to bring up a slight sheen. Use very, very little Vaseline on the end of your finger as too much could spoil the effect.

One other tip; with vinyl tyres in model kits, rub the tread part of the tyre on some wet and dry paper. This will give the tyres a 'used' look.

N. J. Smith, Thatcham, Berks.

Moving tracks

I THOUGHT readers would be interested to know of my method of making the tracks revolve on the German Sd Kfz 7 half-track kit, since, according to the instructions the tracks do not revolve.

Basically it involves swapping round parts 7 and 8 and, on the other side, parts 23 and 24. The kit instructions state that

Continued on next page

Letters—continued

the wheel with teeth on is glued in position on the outside of the axle. If it is placed on the inside of the axle and the other wheel glued in place carefully, then the inner wheel with the teeth on will revolve. If this is done on both sides, and a light oil applied, the tracks will revolve quite freely.

D. Finch, Stourbridge, Worcs.

Use grass

MAY I suggest a material which is a very good substitute for thin rod. It is in fact hay, or dried grass. It can be easily cut with scissors and can be cemented with polystyrene cement. It can also be obtained in any thickness.

I use it for many things such as struts and undercarriage legs of World War I aircraft, Vickers and other machine guns and fascines or light logs for OO scale soldiers.

The good thing about it is that it's free! You can get it from the garden.

Andrew Hillsdon, Marlow, Bucks.
Mr Hillsdon sent some convincing samples to prove to us that his idea is not as crazy as it sounds. Round stems can be bent to oval section to form struts.—EDITOR.

Stirling squadron

I WAS most interested in Mr Bowyer's Short Stirling Profile (March 1967 issue) and thought readers may be interested in my picture. The quality of the print is rather poor after being carried in my wallet these past twenty two years but it is my one and only record I have left from my days with 299 Squadron.

It may be of interest to know that 299 Sqn was formed from 297 Sqn and at that time we operated Whitleys for towing gliders and paratroop dropping. After forming the nucleus of 299 we received Lockheed Venturas, keeping these a few months until the arrival of our Stirlings (Mark IV).

You will note from the photograph that 5G-C had the extra transparency between the upper transparency and bomb aimer's window as mentioned in the Feb, 1967, issue. I think at this time the AEF stripes had been removed or this aircraft was delivered after the D-Day, Arnhem and Rhine crossing operations. I'm afraid my memory is to blame.

One last point of interest is that our Stirlings had a fitting that we referred to as the 'Gate'. This apparatus lay flat against the underside of the fuselage, forward of the tail wheel and hinged at the front; this could then be lowered from inside during flight just prior to dropping paratroops and kept the static lines from fouling the fixed tail wheel when winching in the lines after the drop.

A. L. Fellows, Harrow Weald, Middx.

Tri-motor

MAY I add some information on the Ford to reader Rollins' letter in the June edition? On April 26, 1940, a Hampden of No 106 Squadron, based at Finningley, conveyed 'two pilots of No 271 Squadron to Eastleigh to collect a Ford Tri-motor'. Profile Publications give the Serial Number as X5000. Squadron code letters should be BJ, the squadron was reformed from 1680 Flight in March, 1940. It is possible that someone in this area has more 'gen', and if so I will pass it on.

Could I appeal to readers for photographs and information on Finningley



Top: Stirling IV 5G-C of 299 Sqn at Shepherd's Grove in 1945. AEF stripes have almost entirely been removed. This is the picture referred to by Mr A. L. Fellows in his letter on this page. Above: WP903, the all red Chipmunk in which Prince Charles learnt to fly. Note the small roundels and the periscope. (Picture by Adrian Balch.)

based aircraft and units (particularly 18 and 25 OTUs, and the Bomber Command Instructors School), and No 3 Squadron. Flt Lieut J. T. C. Long, RAF Finningley, Doncaster, Yorks.

Hurricane emblem

IN the November, 1967, issue of your excellent magazine, I noticed on page 116 a photo of P3395, a Hurricane I of No 1 Squadron. I would like to supply some additional information to that given. The wasp emblem on the cowl was a tally of the pilot's 'kills', one black stripe being added for every 'kill'. The previous month, this same aircraft, flying from Northolt, claimed a Bf 109 over Tonbridge, Kent.

P. Higham, Bolton, Lancs.

Plastic lubricants

THE October conversion feature for making a Lancaster Mk II from the Airfix kit was most welcome, and perhaps a conversion for the Mk I (Special) could be published at a future date as a further variation on this theme.

The recent correspondence on the problems of lubricating working plastic models has not so far mentioned that special lubricants are produced for use with plastics. These have excellent lubrication properties with none of the adverse effects resulting from the application of certain ordinary oils to polystyrene models, and are used a lot in the electronics industry. Such products (eg. Hellerine Oil) should be obtainable from certain retail sources concerned with TV and radio.

D. S. Male, Saltford, Bristol.

Lighter colours

WHILST I am more than delighted to find at last a kit of the Hampden, leaving only the Whitley to complete all the major British second world war types, I was sorry to see that it is moulded in black plastic. With the Helldiver moulded in dark blue as well, this seems to me to make modelling more tedious, especially during winter months when most of us have to do our modelling in the evening. Try putting a small part with a spigot into a hole in black plastic, and then a similar part in a light plastic by artificial light (of any sort).

I realise the reason for using these colours in these kits but as most serious modellers paint anyway, it seems to me it would help modellers generally if kits

were made in either light grey or silver plastic.

I wonder how other modellers feel about this.

John H. Palmer, London NW9.

Avenger identity

THE photograph of the Avenger in SEAC markings on HMS Begum published in the June, 1968, issue of AIRFIX magazine prompted me to do some homework. I believe it was an aircraft of No 832 Squadron FAA based on this carrier from January, 1944, until disbandment in February, 1945. Together with four Wildcat fighters also on charge, it carried out anti-shipping and support duties in the Indian Ocean. No 832 replaced Hellcats of 1844 Sqn and was itself replaced by No 1839 Sqn again with Hellcats. HMS Begum also carried Sea Otters of 1701 Sqn by mid-1945 with the Pacific Fleet.

M. W. Starnier, Northampton.

Aluminium finish

THERE have been several letters in your columns about the difficulty of achieving satisfactory aluminium finishes. I wonder if readers have met the following method of obtaining a realistic weathered aluminium finish which I discovered entirely by accident.

I had decided to change the transfers on an aluminium finished aircraft. To do this I placed the model in warm water for several hours. I was not particularly happy about the finish before I soaked it, but I was amazed and delighted with its appearance after its immersion. I used Humbrol silver and the paint was about a week old. I have compared the finish with that of a piece of aluminium sheet and I can assure you that it compares very well indeed. The water was very slightly soapy.

Spare chassis

IN your article 'Wagons Galore' (July, 1968), Mr Simmons, when referring to ready-made wagon chassis, says he does not think Triang-Hornby chassis are available separately. This is not so. If a spares list is consulted it will be seen that there is a variety of wagon chassis and wheels available separately. The prices are from 2s 5d to 3s. These can be obtained from Triang-Hornby direct. I hope this is of some help.

R. C. Milligan, Bramhall, Ches.

AIRFIX magazine

photoPAGE

More rare pictures from readers with captions by Michael J. F. Bowyer. A free Airfix kit is awarded for every picture published, but please note that there is usually a delay of some months before publication due to the limited space at our disposal.

Key: (1) Halifax II R9430:19 shown post-war (1945) over Yorkshire in standard bomber finish. Previous code EY is visible painted out on fuselage side. (2) Anson 19s of 58 Sqn at Dishforth, May 28, 1948; VM352:Y and VL353:W, all silver with black A/D panels.



Key: (3) Mosquito PR34 RG245:S-DH of 540 Sqn in overall PR blue and 'D' Type roundels, 1948. Note very small fin flash. These pictures by Andrew R. Simpson. (3 & 4) Two views of RN135:YB-A a Spitfire XIV flown by Sqn Ldr 'Ginger' Lacey the Battle of Britain ace when CO of 17 Sqn, Seletar, 1945. White codes are thinly outlined in black and the squadron's mottled fist emblem is on the nose. Note the Sqn Ldr's emblem and the 'kill' marks. Pictures by N. T. Wilkinson.



Key: (6) Another 17 Sqn aircraft RN150:YB-W with fuselage serial overpainted and white serial under fin stripe. Outline of large 'C' Type fuselage roundel is just apparent and the SEAC roundel is wearing off at the edges to show the white of the old roundel. Name 'Miss Freda' appears in script forward of cockpit. (7) Dakota KN641 of the Dakota Conversion Unit Holme-on-Spalding Moor, 1945. In the markings of 512 Sqn. It later became ZR-J in 1948, went to the TCDU in 1949, and RAE in 1950.



Key: (8) Close-up of the fuselage marking of another aircraft of the unit with the red/white outline code style used on most machines. Pictures by David Stones.

More pictures on next page

Photopage—continued



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Key: (9) Nice conversion for the Airfix kit would be this RAAF Spitfire VIII, A58-657, in natural, finish with black A/D panel at No 3 Aircraft Depot, Amberley, in 1945. Picture by D. R. Niebling. (10) Splendid period shot shows the arrival of High Commissioner Sir Henry Dobbs in Iraq in 1925, from Vickers Vernon J6979. Picture by W. R. Matthews. (11) Arado Ar 234 B2 in RAF markings after capture at a German airfield in 1945. It is light grey, green, dark green with Hellblau undersides. (12) Captured at the same time was Siebel Si 204D, AIR MIN 42: X, later used by Miles Aircraft. (13) Also at No 3 Aircraft Depot, Amberley, in 1945 was Kittyhawk A29-1208 in natural finish with olive drab A/D panel and olive drab fin forward of the blue/white fin flash. (14) B-24 A72-401 at the same time was also in natural finish and retained its US serial 428153 on the fins. Pictures by D. R. Niebling.



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New Kits—continued from page 418

another selection from the same source. These differ from the Hamlyn prints reviewed above by being more 'photographic' in style and drawn in perspective rather than as side elevations. Colour rendering on these is superb, particularly the 'metals' like brass and bare steel. Again there are many titles of interest to modellers and our batch included a GWR 'Castle' class locomotive, the LMS *Queen Elizabeth* 4-6-2 in full streamlined casing with blue and silver livery for the *Coronation Scot* express of 1937, a GWR 'King' class locomotive, a 1926 Bourne-mouth Corporation tram car, a very colourful electric car of the San Diego Cable Railway Co, and four cars, namely a 1919 Renault, 1910 Ford Model T, 1907 White Steamer, and 1927 Isotta Fraschini. All the railway and tram prints include brief historical notes on the subject beneath the title. Price of each print is 10s 6d, postage extra, and they can be obtained from Prescott-Pickup Ltd, Unit Seven, Stanmore Industrial Estate, Bridge-north, Salop. A list of titles is available to anyone who sends them a SAE. C.O.E.

USEFUL TOOL

NEW tool in the Steadfast range is an item called a Versaplane. This is not strictly a tool of direct use for plastic modelling, but for anyone engaged in model or hobby work generally it is

extremely handy. It looks like a large file with a handle at each end and hundreds of small short blades which make quick work of any job which would normally require a plane—baseboard or shelf-making, for instance. Less 'brutal' than a plane, it takes off less wood more gently and so gives the user a good degree of control over his work. We found it ideal for trimming a door to fit. For modelling it would definitely be handy if you were shaping fuselages or hulls in hardwood when scratch-building.

The Versaplane is available from most hardware and tool shops. The blade is reversible. C.O.E.

AIRCRAFT PLANS

RECENTLY we had the chance to examine a series of three very big 1:72 scale aircraft plans published by Scale Craft, 14556, 5th Avenue, NE, Seattle, Washington 98155, USA. These are dye-line drawings intended specifically for scratch modellers, though one of the subjects depicted, the B-52 bomber, has just been produced in kit form by Monogram. The other two are a B-50D, which could be converted from the Airfix B-29 kit, and the giant Blohm und Voss BV 222 flying boat of World War 2 vintage. Despite the rather crude look of the plans (due to their type of production), they really are most useful, informative, and accurate. In addition to port and star-

board elevations and the usual plan views, there are cross-sections, detail drawings, camouflage and marking details, specifications, and just about all else the modeller needs to know, all included on each sheet. Of the three, the B-50D is probably the most useful to the average modeller since, as mentioned above, a model built from these drawings could use the B-29 kit as a basis.

The drawings are sold singly and can be obtained to special order from Scale Craft, BMW Models of Wimbledon supplied our review samples. Prices on application (with SAE) to BMW Models. Bear in mind that they are very large plans; the BV 222 sheet is 6 feet long. C.O.E.

CORRECTION

IN last month's review of new Historex kits we unfortunately quoted incorrect prices. The foot figure does in fact cost 13s (postage extra) and the mounted figure 28s (postage extra), not the lower prices we gave. Apologies if we caused any delay or inconvenience to customers over this.

AUSTRALIAN AGENT

AUSTRALIAN readers may like to know that Technical Books & Magazine Co Pty Ltd, 288-299 Swanston Street, Melbourne, Victoria 3000 are now agents for the book *How to go Plastic Modelling* (Australian price: A\$3.95) and *World Uniforms in Colour* (Australian price: A\$4.70).

AIRFIX magazine

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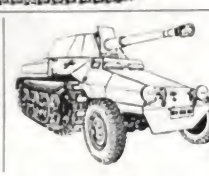
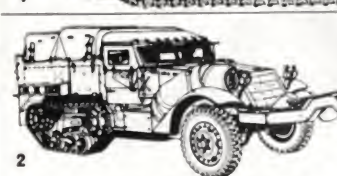
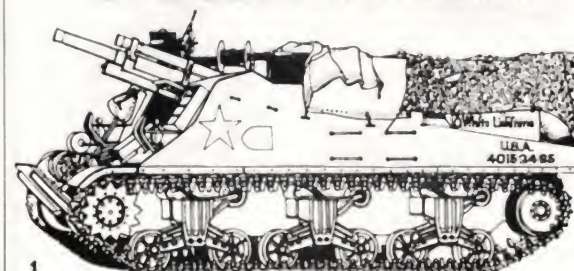
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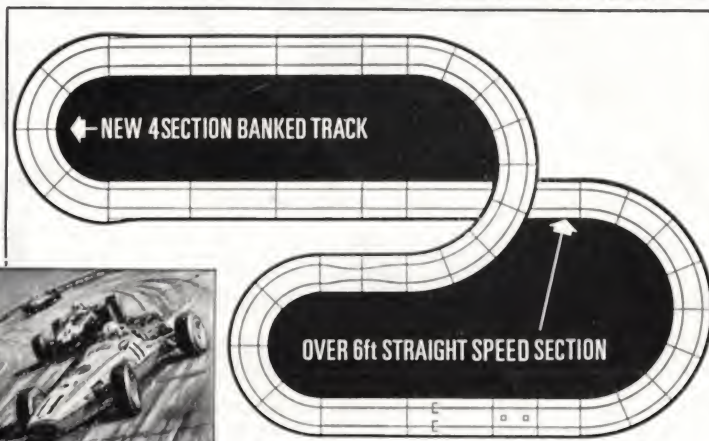
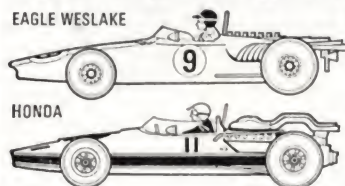
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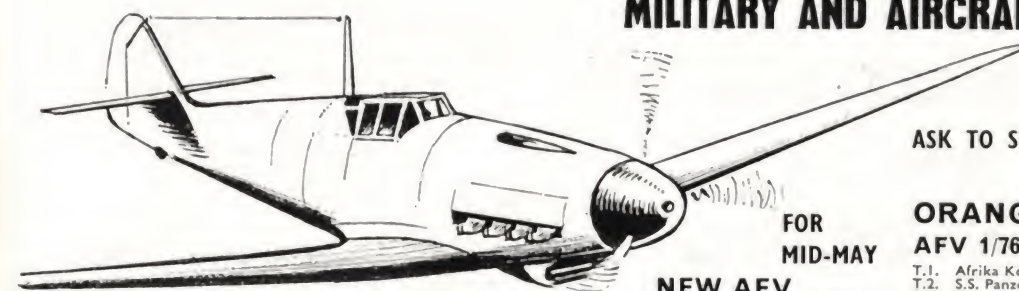
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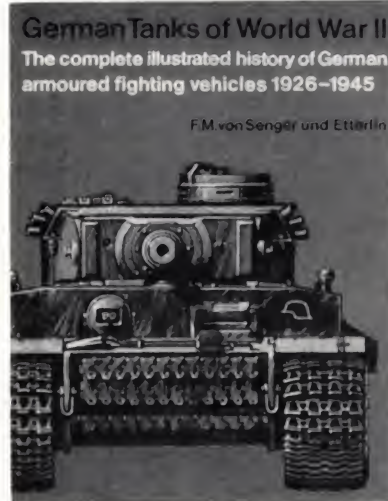
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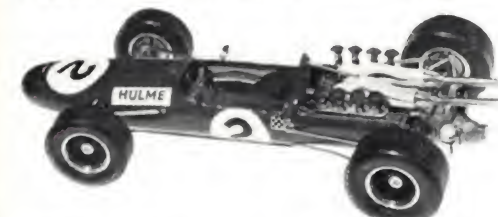
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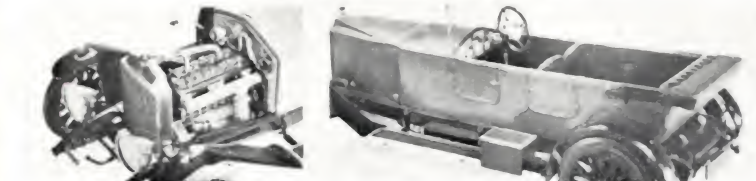
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